

XERISCAPE

The conservation of water and energy through creative landscape.



Almost every summer North Texas has been plagued with drought like conditions. This and a growing population has increased the demand of the states limited supply of quality water. Since water is one of our most limited and fragile resources conservation is critical.

Contrary to popular belief Xeriscape doesn't mean yards full of rock and cactus. In fact almost any plant has a place in a well planned Xeriscape Landscape. Utilizing the seven key principles of Xeriscape the lush green landscapes we are accustomed to here in Texas can still be achieved.

Xeriscape proponents have emphasized seven landscape principles:

1. Planning and Design
2. Soil Analysis and Improvement
3. Appropriate Plant Selection
4. Practical Turf Areas
5. Efficient Irrigation
6. Use of Mulches
7. Appropriate Maintenance

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Planning and Design

Creating a water efficient landscape should begin with a design.

Planning is the first and most important step in Xeroscaping. The design needs to fit the intended use and desires of the residence. In this process it is important to consider the landscape budget, appearance, function maintenance, and water requirements.

The first step would be to create a base plan of the property including the house, driveway, existing hardscape, and existing trees.

Once the base plan is done, add descriptive notations to the different areas. For example such areas might include a play area, a screen for privacy, or a seating area. Limit grass areas to only useful lawns. High traffic areas might do better with walkways or patios instead of turf. The planting of deciduous trees on the west and southwest side of the structure allow sunlight to warm the house during the winter. At the same time the trees provide shade from the intense sun during the hot summer afternoons.

The final step in creating the landscape plan would identify specific site details. Take in account the regional and microclimatic conditions of the site when applying details. Zone or group plants according to water, light and nutrient needs. An efficient irrigation system should be integrated with the landscape plan. The final design should serve as a blueprint for creating the Xeriscape landscape.

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Soil Analysis and Improvement

Soil is the foundation of every landscape. The better the soil the more successful the landscape will be.

Soil is made up of three main particles
sand, silt, and clay.

- Clay soils have a high moisture retention capacity but absorb and release water slowly. Quickly applied water tends to run off before clay soils can absorb the water. Clay soils also tend to be very compacted which restricts the establishment of deep roots systems necessary for plants to survive a drought.
- Sandy soils provide excellent drainage but have poor retention of water. Water applied to sandy soils percolate quickly through the soil which limits the time plants have to absorb the water.

Amending both clay and sandy soils with organic matter will improve the quality of the soil and provide a better environment for the landscape. Soil rich in organic matter provides nutrients and micro-organisms beneficial to the plants. The nutrients released by organic matter makes frequent fertilizing unnecessary. Topdressing is a great way to add organic matter to existing beds and lawns.

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Appropriate Plant Selection

Xeriscape doesn't limit planting to cactus and other desert plants. There are a wide variety of plants that do well with little or no supplemental irrigation. When selecting plant material think low maintenance. Species that are native to the area or well adapted varieties tend to have lower water demands, fewer pest problems, and less fertilizer needs. A wide diversity of species has many benefits. Planting with large quantities of only one species can create a monoculture susceptible to pest or insect problems. A variety of species will also allow for a more interesting landscape year round. Every landscape project contains several different microclimates, the key is to group plants with similar needs together.

•Water Requirements

To irrigate efficiently plants should be grouped by irrigation zone according to their watering needs. Plants that require more water would do best in a low-lying areas.

•Light Requirements

Plants with similar light requirements should be grouped accordingly. For example sun loving plants do best with southern or western exposure while shade loving plants prefer northern or eastern exposure.

•Soil and Nutrient Needs

Every plant has a specific nutrient and soil pH level for optimum growing conditions and plants with similar requirements should be grouped together. Acid loving plants such as Azaleas should not be grouped with some native plants that prefer a more neutral pH level.

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Practical Turf Areas

Xeriscape Landscapes do not require the removal of all turf areas. Instead, limiting the turf grass to only useful lawn areas decreases maintenance. Design turf areas in rounded compacted shapes that allow efficient mowing and watering. Avoid planting narrow areas or slopes with turf which are difficult to water efficiently and maintain.

Minimize grass areas by using creative alternatives. Decks and patios require little maintenance and increase square footage of living space while adding value to the home.

Children's play areas can be covered with sand, bark or mulch. Rubber mulch is a great turf alternative for a play area. Rubber mulch is recycled from old tires and creates a soft surface to minimize injury. Paths created with mulch, decomposed granite, stone or gravel create a more usable alternative to turf in high traffic areas.

Choosing the appropriate turf is also important. The two most common grasses we see here in North Texas are Bermuda and St. Augustine. Other more drought tolerant grasses include Buffalo, Zoysia, and Centipede grass.

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Efficient Irrigation

The type of watering equipment needed depends on plant selection, design, and budget of the project. Whether the landscape has a drip system, automatic sprinkler system, or hand watering is the method of irrigation; efficiency is the key. No matter which irrigation system is in use there are ways to make it more efficient. Watering less frequently but for a longer period of time allows for a deep watering. Plants develop deeper more drought tolerant root systems from deep watering. Frequent light watering results in shallow root systems leading to water stress during drought conditions. Watering during the coolest part of the day helps avoid evaporation and wind drift. Night time watering can cause disease, so early morning or late evenings are the optimum times to water. Over watering can leach needed nutrients deep into the soil making them unreachable by the plants. Runoff water not only is wasteful, it carries polluting fertilizers and pesticides to streams and lakes. Every irrigation system needs regular maintenance to ensure proper working order. A complete system audit is recommended annually. Irrigation scheduling should be adjusted quarterly at a minimum. To avoid over watering a rain shut-off device and a freeze sensor should be included on every irrigation system.

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Use of Mulches

Mulch is an important component of Texas landscapes for several reasons. Mulch retains moisture and controls soil temperatures which as a result reduces the amount of water lost through evapotranspiration. Mulch also discourages weed growth and aids in erosion control. Weeds not only add competition for water but host many insects and pest as well. There are two types of mulch organic and inorganic.

Organic mulch is wood based such as hardwood, pine or cedar. Since organic mulches decompose over time, the mulch needs to be reapplied twice annually. The decomposing of the organic mulch helps improve and replenish the soil. The coarser the mulch the deeper it should be applied to get the desired benefits of the mulch.

Inorganic mulch is a stone based mulch. Granite, river rock, lava rock, and pea gravel are types of inorganic mulch. Inorganic mulch provides many of the same benefits as organic mulch but inorganic mulches tend to radiate and retain heat. For this reason inorganic mulch is not the best option for sunny locations.

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Appropriate Maintenance

There is no such thing as a maintenance free landscape. Once established Xeriscape landscapes provide less maintenance requirements for several reasons. The reduction and shape of turf areas allows for easier and less mowing. The selection of adapted plants placed in the right locations tend to have less disease and insects problems. Once established native or well adapted plant species require less fertilizer and water. All new landscapes require supplemental irrigation for about twenty four months till the plant material is considered established.

Mowing

Mowing less frequently at higher heights is beneficial to the grass. Bermuda grass should be cut at 1.5" to 2.5" and St. Augustine should be kept at a height or 2" to 3". Buffalo grass prefers heights of 3" to 4" and Zoysia needs to be kept at about 2". Keeping the grass cut shorter causes stress and results in the grass drying out quicker. Leaving the grass clippings in the turf areas helps recycle nutrients back into the yard.

Pruning

Regular pruning of plants promotes new growth and keeps the plant looking attractive. The best time to prune is the late winter or early spring when the plants are still dormant. This helps prevent the spread of disease through insects which are prevalent with the warmer weather. Many plants bloom on new growth so pruning is necessary to keep plants blooming year after year. Deadheading is removal of spent flowers. Not only does deadheading keep the plant looking more attractive but it helps prevents unwanted seedling from germinating. Removal of the spent flowers encourages the production of more blooms.

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Appropriate Maintenance

Fertilizing

Applying fertilizer at the proper time and correct rate is critical.

A slow-release nitrogen fertilizer should be applied to turf areas in the spring while a quick-release nitrogen fertilizer is more appropriate for fall fertilizing. Many of the native plants do not require fertilizer since they are already adapted to the natural soil condition. At the same time plant species that are not adapted to the area require a regular fertilizer program. Once again, the grouping of plant material is essential. Plants with similar fertilizer requirement should be grouped together to help avoid pollution caused by excessive amounts of fertilizer.

Controlling Pests

Integrated Pest Management (IPM) is the most beneficial way to control pest in the landscape by taking advantage of natural methods. IPM is the process of four basic steps. The first step is to discover the problem. The next step is to identify the cause. After monitoring the situation, the solution is managing the problem through a variety of techniques. Some techniques of IPM include organic insecticides, beneficial insects and selecting disease-resistant plant material. Another way to control pest is the good old fashion harsh insecticides. These products will eliminate the pest problem but often will kill many beneficial insects as well, not to mention the possible pollution of water. The removal of weeds and application of mulch both help in promoting stronger plants that are more resistant to pest. Diseases can be caused by several agents. Proper plant maintenance and water schedules will help eliminate fungus and bacteria problems.

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For more information about Xeriscape landscaping feel free to
ask your salesman or visit these great informative sites.

WWW.TXSMARTSCAPE.com

WWW.greenbuilder.com/sourcebook/xeriscape.html

www.xeriscape.org

<http://aggie-horticulture.tamu.edu/>