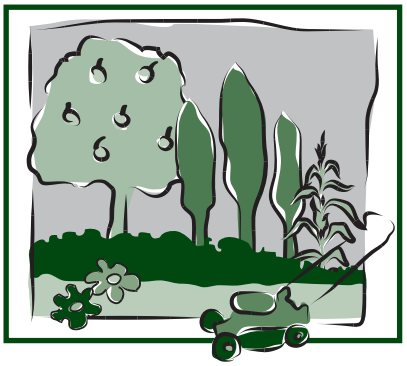
COLORADO STATE UNIVERSITY
EXTENSION

Xeriscaping: Creative Landscaping

Fact Sheet No. **7.228** Gardening Series | **Basics**

by C. Wilson, J.R. Feucht and Susan Carter*



Xeriscaping (zer-i-skaping) is a word originally coined by a special task force of the Denver Water Department, Associated Landscape Contractors of Colorado and Colorado State University to describe landscaping with water conservation as a major objective. The derivation of the word is from the Greek "xeros," meaning dry, and scape meaning the pattern of the landscape – thus, xeriscaping.

The need for landscaping to conserve water received new impetus following the drought of 1977 throughout the western states and the recognition that nearly 50 percent of the water used by the average household is for turfgrass and landscape plantings.

Unfortunately, many homeowners have cut back on turfgrass areas by substituting vast "seas of gravel and plastic" as their answer to water conservation. This practice is not only self-defeating as far as water conservation is concerned, it also produces damaging effects to trees and shrubs. This is not xeriscaping.

Planning – The First Step

Whether you want to redesign an old landscape, or start fresh with a new one, a plan is essential. Site exposure is an important component of the plan, no matter how simple the plan. As a rule, south and west exposures result in the greatest water losses, especially areas near buildings or paved surfaces. You can save water in these locations simply by changing to plants adapted to reduced water use. However, don't be too quick to rip out the sod and substitute plastic and gravel. Extensive use of rock on south and west exposures can raise temperatures near the house and result in wasteful water runoff and increased temperatures.

Slope of Property

Slope or grade is another consideration. Steep slopes, especially those on south and west exposures, waste water through runoff and rapid water evaporation. A drought-resistant ground cover can slow water loss and shade the soil. See fact sheet ***7.230, Xeriscaping: Ground Cover Plants***, for suggested ground covers. Strategically placed trees can shade a severe exposure, creating cooler soil with less evaporation. Terracing slopes helps save water by slowing runoff and permitting more water to soak in.

Reduce Irrigated Turf

Avoid narrow strips of turf, hard to maintain corners, and isolated islands of grass that need special attention. Not only is maintenance more costly, but watering becomes difficult, often wasteful. If your yard is already landscaped, see ***7.234, Xeriscaping: Retrofit Your Yard***, for information on ways to evaluate and eliminate unneeded turf grass areas.

Reduce bluegrass turf to areas near the house or that of high use. If appropriate, try using more drought-resistant grasses or even meadow mixes containing wildflowers. Refer to ***7.232, Xeriscaping: Turf and Ornamental Grasses***, for suggested alternatives to bluegrass.

Soil Preparation

Proper soil preparation is the key to successful water conservation. If the soil is very sandy, water and valuable nutrients will be lost due to leaching below the root zone. If your soil is heavy clay, common in this area, you will lose water through runoff.

* J.R. Feucht, Colorado State University Extension landscape plants specialist and professor (retired).
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Quick Facts

- Proper planning is the first step in landscaping to reduce water use.
- Steep slopes with south and west exposures require more frequent irrigating to maintain the same plant cover as east or north slopes.
- Terracing slopes reduces runoff.
- Limit irrigated bluegrass turf to small or heavily used areas.
- Soil amendment is a key to water conservation.
- Proper irrigation practices, system design and audits can lead to 30 to 80 percent water savings.
- Organic mulches can keep the soil moist and improve the soil overtime.

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A good soil is one that supports healthy plant life, conserves moisture and has a balance of soil clusters (aggregates) and pore spaces. The "ideal" soil has as much as 50 percent by volume pore space, with the soil itself consisting of a good balance of sand, silt and clay creating a loam soil.

A major problem with heavy soils is that clay tends to dominate the soil complex. Clay is composed of microscopic crystals arranged in flat plates. When a soil has a high number of these crystals, they act much like a glue, cementing the particles of sand and silt together and resulting in a compact, almost airless soil.

Such soils often repel surface water (hydrophobic soil), resulting in runoff. When water does get into these soils, it is held so tightly by the clay that it is not available to the plants. Plants in a clay soil, even though it is moist, often wilt from lack of moisture. Plant roots also need air to thrive. In clay soils, air spaces are small and fill with water, so plant roots often suffer from oxygen starvation.

In very sandy soils, the opposite is true. Sandy soils have very large particles creating large pore spaces. Because the particles are large, there is little surface area to hold the water, so they tend to lose water rapidly.

Creating a good soil takes more than a year. Add organic matter annually to garden areas. In areas to be sodded or seeded, add organic amendments as a onetime procedure. Since this is your one chance to add a good amendment thoroughly 6-8" deep. See: CMG Garden Note ***#241: Soil Amendment.*** This encourages deep roots that tap the water stored in the soil and reduces the need for wasteful, frequent water applications.

Steps to Xeriscaping

- Plan your landscape including your property's exposure and slope and your family uses.
- Reduce irrigated turf where appropriate and replace it with low-water alternatives.
- Prepare the soil. This is your best opportunity.
- Select appropriate plants.
- Irrigate properly.
- Use mulch to save water, inhibit weeds and improve soil.
- Proper Maintenance

Proper Irrigation Saves Water

Proper irrigation practices can lead to a 30 to 80 percent water savings around the home grounds. Check existing sprinkler systems for overall coverage. See Lawn Irrigation Self Audit (LISA) website. If areas are not properly covered or water is falling on hardscapes, adjust the system. This may mean replacing heads, adding more heads, or adjusting to do a more efficient job.

With the system on, observe places that are receiving water where it is not needed. Overlaps onto paved areas or into shrub borders may result in much water waste. Overwatering trees and shrubs may lead to other plant health issues and other problems.

Irrigate turf areas differently than shrub borders and flower beds. North and east exposures need less frequent watering than south and west exposures. Apply water to slopes more slowly than to flat surfaces. Ideally, these are different irrigation zones (Hydrozones). Examine these closely and correct inefficiencies in irrigation system design.

If you do not have a sprinkler system and are just beginning to install a landscape, you can avoid the pitfalls of poorly designed and installed systems. Have a professional irrigation company do the job correctly. Make sure the system is designed to fit the landscape, the water needs of the plants, and is zoned to reduce unnecessary applications of water. Coordinate the landscape design to select plants that have similar cultural requirements and match the irrigation system to those needs, resulting in a sensible water-saving scheme.

Consider a drip system for outlying shrub borders and raised planters, around trees and shrubs, and in narrow strips where conventional above ground systems would result in water waste.

If you use hoses instead of an underground system, you can observe water patterns. Instead of watering the entire lawn each time, spot water based on visible signs of need, such as turf that begins to turn a gray-green color.

Avoid frequent, shallow sprinklings that lead to shallow root development. Compact soils result in quick puddling and water runoff. They need aeration with machines that pull soil plugs. Fine compost applied at ¼" depth after aerating can improve the soil.

Water trees and shrubs separate from the lawn ensuring that the soil is watered to a depth of 12-18".

Mulching the Landscape

Properly selected and applied mulches in flower and shrub beds reduce water use by decreasing soil temperatures and the amount of soil exposed to wind. Mulches also discourage weeds and can improve soil conditions.

The two basic types of mulches are organic and inorganic. Organic mulches include straw, partially decomposed compost, wood chips, bark, fiber mats, and even ground corncobs or newspapers. Inorganic mulch is mainly gravel. Plastic film or polyethylene film and woven fabric is not recommended as oxygen and water does not penetrate it, hurting trees and shrubs root systems. A combination of both organic and inorganic can be used. Plastic mulches are options for annual vegetables.

If soil improvement is a priority, use organic mulches. Wood chips and compost are most appropriate as these materials break down becoming an organic amendment to the soil. Earthworms and other soil organisms help incorporate the organic component into the soil. Organic mulch is preferred because most soils in this area are low in organic content and need organic amendments to improve aeration and water holding capacity.

Inorganic mulches, such as rock or gravel, without fabric or plastic, allow for water and air exchange. See ***7.214, Mulches for Home Grounds.***

Selecting Plants

Carefully select plants to be compatible with soil, exposure and irrigation systems. For recommended plants, see:

7.229, Xeriscaping: Trees and Shrubs.
7.230, Xeriscaping: Groundcover Plants.
7.231, Xeriscaping: Garden Flowers.
7.234, Xeriscaping: Retrofit Your Yard.