



# Landscape Water Conservation Basics

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People might assume that letting your trees, grass and shrubs die, or a yard composed of rocks and gravel might best accomplish the goals of having a low-water or water-efficient landscape. Fortunately this is not what needs to occur! Indeed, it has been well proven that you can have lush, colorful and functional water-wise landscapes that are full of plants, turf and gardens that use substantially less water.

Low water or water-efficient landscaping is often called “Xeriscaping,” based upon the Greek word for dry “xeros”, meaning “dry” and combined with “landscape.” The word “Xeriscape” is commonly mispronounced as “Zeroscape.” As in a concrete landscape or one filled with rocks and gravel, luckily, there are other options. The true way to pronounce the word “Xeriscape” is “zeree’-scape.”

The following are some tips and guidelines towards reaching that goal of having a good-looking yard that also uses minimal water. The tips are applicable mainly for Cheyenne and the High Plains but are also applicable in many other places.

## SOILS

The foundation of water conservation in the landscape lies in creating soils that have a high water retention ability. To enable your soil to better absorb and hold water, as well as allow for deeper roots, you may need to add a soil amendment prior to planting. For new landscapes, begin with good topsoil, usually a minimum of 6 inches deep. Then add a minimum of 2 to 3 inches of organic matter such as compost or peat moss to your soil. Rototill or dig and mix the organic matter into the soil at least 6 inches deep. The one exception to this is landscaping with native plants. With the natives, soil amendments do not need to be nearly as extensive, as they prefer soil that is not too rich. For many native plants, the only soil preparation necessary is to loosen the soil as long as there is some naturally occurring topsoil. Anytime you are dealing with sub-soils where the topsoil has been removed then you must do some soil preparation and add amendments.

If you are converting an existing landscape that has successfully grown bluegrass on it for many years, then you probably don’t need to add much in the way of soil amendments or topsoil. A soil test is the best way to determine exactly what your soil may need. For more information visit the county extension agent.

## INITIAL PLANNING AND ZONING

Making the transition to a xeriscape usually begins with a plan or design. First you need to start with an initial design to organize in your mind where your low-water use landscape plants will be located. For any home design begin with a piece of graph paper. Draw a picture of your landscape to an appropriate scale and include as much detail as possible. Include the location of the house, garage, sheds, fences and each tree or shrub. You can step off the distances if no measuring tape is available; assume that one step is about 3 feet. Also mark the points of the compass on your drawing. Label all the trees and shrubs simply as leafy (deciduous) or evergreen (coniferous). Be sure to locate sidewalks and any outdoor living areas such as decks, patios or future locations of these items. Remember a patio or deck is not only nice to have but also uses no water!!!

## Creating zones

The next thing to consider is the creation of zones in your yard. While some people may want to make the whole yard one low-water landscape there are some things to consider.

Because different areas in your yard get different amounts of light, wind and moisture, you should do an inventory of your yard as to which areas might be most appropriate for high and low watering needs. The goal of your design is to minimize water waste, group plants together with similar light and water requirements, and place them in an area in your yard that match these requirements. For instance,

place high water-use plantings in low-lying drainage areas, near downspouts, or in the shade of the home (usually the north side). Sloping areas (especially south slopes) are going to use more water. Also areas that are exposed more to the prevailing winter wind will use more water. Of course, sunny areas (especially on the south side of your home or a fence) will also use a lot of water. Zoning only makes sense, for instance if you place a low-water use plant by placing it in a wet zone or a high water use plant in a dry zone your plants will likely suffer and die.

A xeriscape is not a black or white choice; the best landscapes have varying degrees of water conservation. Some plants are extremely water conserving while others may use low to moderate amounts of water. You may even see a good reason to continue on with some high water use areas in your yard. For instance, people often like to have an area where kids can play. Bluegrass is actually quite wear-tolerant. There is likely an appropriate place for all types of plants in your yard: low, moderate and high water-use.

### **Draw your yard into zones**

On your graph paper draw in appropriate zones in your yard based upon your yard's attributes (shade, slope, drainage and personal preferences). Usually people do two or three different zones. Here is an example of 3 zones:

1) **High water use zone** - where you have bluegrass and other more traditional landscape plants needing regular watering.

2) **Medium water use zone** - for plants that can tolerate periods of drought but prefer occasional supplemental watering.

3) **Low water use zone** - where plants survive on little to no supplemental watering except during their initial establishment and in extreme extended periods of drought. This area would be either or any combination of the following: the hardest area to irrigate, most exposure to sun and wind, the poorest soils and/or furthest away from the house. Some native plants do well in this zone (some natives use a lot of water like aspen, spruce, dogwoods or willows), but there may be some other good non-native choices that exhibit great drought tolerance.

Be sure to check the Water Wise Tree and Shrub plant list for help in selecting appropriate plants for each zone.

### **Planting in the zones**

To minimize water waste, group plants in the appropriate zones in your yard. Within each zone take into account other needs of plants besides their water consumption such as their ability to tolerate shade or exposure to wind. For instance, place high water-use plantings in your designated high water use zones such as low-lying drainage areas, near downspouts. Every landscape has some shady areas – most commonly on the north side of the home. This is where you plant shade tolerant plants and turfs.

High water use zones are composed of plants that most homeowners already have (bluegrass, etc.) so this is the area where you will preserve what you already have in the way of turf, trees and shrubs. People will often choose to maintain a high water use area closest to the home and often adjacent to the front and back doors. This works out well because this area is easiest to water. Limited areas of bluegrass may also be an appropriate material for high-traffic areas especially where children like to play.

The medium water use zone is usually a transition between the high water zone and a low-water zone. This may be an area with some shade or sun but receives one-half to one-third the water that a bluegrass area might receive.

The low water use area is usually (but not always) more exposed and furthest away from the home.

You will need to set up a strategy for watering each zone. The advantage of low water zones mean that they need less water so you may not need to depend upon automated systems. Read on for more information on watering your landscape.

## **PLANTING & ESTABLISHING A NEW WATER EFFICIENT LANDSCAPE**

Spring is the best time to plant trees, shrubs and flowers. While planting can be done other times in the summer or fall, it is more challenging to establish plants in the heat of the summer or late in the season when roots have less time to establish. Always consider the full-grown size of a given tree or shrub. Be sure you are not planting tall or wide trees on street corners where viewing traffic is important or underneath power lines where they may someday have to be severely pruned or removed.

## **Planting details**

When you plant trees and shrubs, do not add compost, amendments or fertilizer directly into the planting hole. If the soil is poor you should improve the whole area and not just the hole. One material that can be added to a planting hole is a water-absorbing polymer. These are small white crystal-like materials that, when wet, hold up to 400 times their density in water. They then will slowly release the water to the root of the plant, sometimes eliminating or saving up to 50% on irrigation, depending on the annual rainfall in the region. They also absorb and slowly release fertilizer, improving nutrient retention. For trees and shrubs add the following amount of polymer per gallon size of plant container: 1 gal use 1/4 cup, 3 gal use 1/2 cup, 5 gal use 3/4 cup 15 gal use 1 1/2 cup. Dig the hole at least three times the size of the container (mostly in width) and incorporate the polymer through out the area. (1/4 cup = 2 oz. Polymer). Check local nurseries for the polymer product. One product we have tried and would recommend is Watersorb® available at: 501-623-9918 or <http://www.watersorb.com>.

After planting, create a dam around the tree, or if on a slope, leave the topside open to collect water thus creating a small water reservoir from natural runoff. Then add mulch around the tree or shrub.

Even the most drought tolerant plant requires some water in the first year or two. A minimum of once a week watering during the growing season should be provided in the first year to get these plants established.

### **ALWAYS MULCH YOUR PLANTINGS!**

Using mulch is one of the best ways to conserve water in your garden beds and around your trees. A mulch is any material laid over the soil which helps keep plant's roots cool, prevents soil from crusting, minimizes evaporation and reduces weed growth. Mulches also give beds a finished look and enhance the visual appeal of your garden. Besides reducing water needs of your plants, mulch applications will also improve the soil's texture (especially with organic mulches).

Organic mulches, such as bark chips, pole peelings or wood grindings, should be applied at least 4 inches deep. Because they decompose over time, they're an excellent choice for use around trees and shrubs. For flower beds you can use grass clippings or dried leaves (although they decompose rapidly and need regular replacement), hay or pine needles. If your turf has been treated with dandelion herbicides, be sure the clippings are well-composted before using.

Inorganic mulches include rocks and gravel, and should be applied at least 2 inches deep. These are best among woody plants. They rarely need replacement and are good in windy spots. Mulch may be applied directly to the soil surface or placed over a landscape fabric.

### **WATERING**

How and when you water have a lot to do with water conservation. By watering in the hotter part of mid-day you may lose a significant amount of water to evaporation and even wind. In our dry climate we have little to no problem with fungus in our turf. As a result, you can safely water your lawn in the early morning, evening or night. Those with an automated watering system can even set sprinklers to come on in the middle of the night.

#### **Timers**

Those who don't have the benefit of an automatic watering system know it is easy to forget to turn off the sprinkler. You can waste a lot of water over the course of many hours if you have forgotten to turn off a sprinkler. Now this practice may be illegal and subject to a fine. Forgetting your watering is easily solved with the purchase of a simple water timer. These timers usually cost around \$12 - \$15. Timers can be attached to any hose at the faucet and will automatically turn the sprinkler off at a predetermined time or gallonage. These can often pay for themselves in a month or two.

#### **Hoses**

Your hose can also be a source of water loss so always keep an eye out for leaky hoses. Change the washers in your hose at the first sign of leakage or at the beginning of each season. An old hose that leaks from cracks and degradation should be immediately replaced. For hard to water landscaped beds that include shrubs, flowers and trees, consider using the newer black soaker hoses (also called weeping or leak hose) constructed out of recycled tires or vinyl. These leaky hoses are great for soaking long narrow, or odd shaped areas that need irrigation. This hose works much like a drip system, but you don't need to

do any plumbing. The water then seeps out of the pores slowly and is a great way to minimize evaporation (as long as you don't forget that it is on). The leaky black hose combined with a timer is a great way to save water in flowerbeds or around trees and shrubs. These hoses are not great at watering turf.

### **Drip systems**

A drip system can be installed by homeowners with do-it-yourself skills or by local irrigation companies. Studies show that well-designed drip irrigation system uses 30 to 50 percent less water than more conventional watering methods. They are also less costly to install. Like the leaky soaker hose, drip systems are best for trees, shrubs and flower beds. Unlike many other types of watering systems, they can be adapted to enable the watering of ornamental pots.

### **Show your colors!**

By using more native and drought tolerant plants, we will come to better appreciate the colors of the intermountain West while we creatively use a combination of low-water use strategies. By following these strategies, we can substantially conserve our precious water and save money. The good news is that we don't have to sacrifice beauty. A low-water use landscape does not have to be a barren landscape. With proper planning you can easily create landscapes that are lush and full of texture and colors. Low water landscapes, if properly designed can still provide shade, beauty and protection from the elements. An added bonus is that it will save you both time and money!

Related documents: available at the Cheyenne Botanic Gardens or at [www.botanic.org](http://www.botanic.org):  
[Turf In Times of Drought](#) & [Water-Wise Trees and Shrubs](#)