



# BASICS

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## Xeriscaping: Retrofit Your Yard

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The average home landscape uses as much as 50 percent of the water in a household. Even if you already have a well-established landscape, you can substantially reduce water use by following some simple steps.

### Quick Facts...

As much as 50 percent of household water is used for the yard and garden.

Change turf areas on steep slopes, hard-to-water places and narrow mowing strips to low-water ground covers.

Use or update an irrigation controller for cycle and soak irrigation to minimize runoff from slopes and compacted soils

Modify sprinkler systems to water only turf areas, not hardscapes.

A low pressure, micro-irrigation (drip) system can save water.

Like any plants, xeric plants require more water for establishment

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### Survey Your Yard

**Observe turf grass areas that are difficult to water and maintain.**

These include:

- along fences;
- on steep slopes where water tends to run off;
- corners of lawns where it is hard to water without overlapping into other areas;
- narrow strips of lawn between the house and sidewalk or driveway; and
- irregularly shaped lawn areas that do not fit the normal pattern of most sprinklers.

If you have an underground sprinkler system, turn it on and observe where the water sprays. Better yet, place shallow containers, such as plastic margarine tubs or metal coffee cans, in various locations and measure the water depth after 10 minutes. If some areas don't receive as much water as others, your sprinkler system may require maintenance or renovation to water the landscape evenly without wasting water. Common sprinkler system problems include mismatched nozzles or spray and rotor heads installed on the same zone. (For more information see fact sheet 7.239, *Operating and Maintaining a Home Irrigation System*.)

Adjust heads that are spraying concrete and other hardscape surfaces to water only plants. Sprinklers spraying wood fences cause unsightly water staining and rapid deterioration thus increasing financial costs. Relocate sprinkler heads near fences so water sprays towards plants, move heads further away so water doesn't wet fences, or switch to drip (micro-irrigation).

Steep slopes, especially those on south and west exposures, waste water through runoff and evaporation. Utilizing or installing a control timer that allows for cycle and soak irrigation may solve the problem on gentle slopes. Another idea is to convert these areas to perennials or ground covers that tolerate the exposure and thrive on little water. They also are easier to maintain because unsafe mowing on steep slopes can be eliminated. Drip (micro-irrigation) that slowly applies water over longer periods of time may further minimize runoff. Another option to consider is terracing. Note that landscape berms where soil is deliberately mounded also waste water from sprinkler runoff. Drip (micro-irrigation) is a better way to irrigate berms.

Strips narrower than 8 feet are difficult to irrigate effectively. Size areas accordingly. Irregularly shaped areas should be re-shaped to fit sprinkler irrigation patterns and odd-shaped areas converted to drip irrigated, xeric plantings or hardscape.

**Study the highly trafficked areas in your yard including play areas for children and exercise areas for pets.** These areas are best left in turfgrasses that can take the wear. Note that bluegrass is one of the best-adapted grasses for wear tolerance. Xeric grasses such as buffalograss have less wear tolerance partly because they grow slowly on less water and don't replace worn-off grass. Other areas, however, can be converted to shrub borders, flower gardens and non-turf ground covers that use less water. Designated paths of worn turf may be altered to stepping stones or flagstones, perhaps with a dwarf groundcover planted among the stones.

**Look for lawn areas that do poorly because of heavy shade from trees or structures.** Rather than keep these areas in turf, plant alternative ground covers that tolerate shade and mulch them. If the location is appropriate, install a patio or raised deck..

Note that turf does play an important role in the landscape when placed in well thought out locations. Turf prevents soil from moving into the air, streams and homes. Turf is the best filter of runoff and scrubs pollutants from water. It builds soil for other plants and is one of the best means of urban fire control.

## Removing Turf

Mark off unwanted turf areas with a string and stakes or a garden hose. Do not leave sharp angles or small strips that are difficult to water without overlapping into nonturf areas.

Modify your sprinkling system so water is applied only to the turf you retain. In some cases, this may involve changing the spray patterns of the heads from a full circle to a partial circle. In other cases, it may require reorienting heads to direct water away from the nonturf areas. Major changes, however, may require installation of in-line shutoff valves or even relocation of complete sprinkler lines.

Another method is to let the sprinkler pattern be your guide and renovate areas not covered by the spray pattern.

It is not necessary to strip unwanted sod. An easier method is to apply glyphosate (sold as Roundup or Kleenup) to actively-growing grass. Use a spade to cut a slit between turf you want to save and that to be killed. Severing underground roots avoids movement of herbicide spray via the roots to turf designated for retention.

Glyphosate must be applied carefully, because even the slightest drift onto adjoining grass or other nontarget plants will damage them. Use a low-pressure, coarse-droplet spray with a handheld, cardboard or metal spray shield. Better yet, consider a wick-type applicator available at many garden centers. Apply only when you are certain it will not rain for at least eight hours after application. Wait seven to ten days, then plant to alternative ground covers, shrubs or flowers.

Another way to kill grass is to overlap black and white newsprint on the lawn you want to kill. Lay the newspaper on the grass in overlapping sections at least 10 sheets thick. Weigh it down with 4 inches of wood chips to keep it from blowing. You usually can purchase wood chips from tree service companies. Sprinkle the chips with water to settle them and keep them from blowing.

The newspaper and wood-chip mulch smothers the grass. After a few weeks the grass will be dead and the newspaper will begin to decompose, creating extra organic matter that is beneficial to the soil.

In areas where you plan to use mulches or you are going to plant on a steep slope, leave the killed grass in place. The dead grass and its roots and runners help reduce soil erosion until the new planting is established. To improve appearance and reduce future weed growth, cover the dead grass with about 4 inches of mulch, such as wood chips or bark chunks. Spot treat with glyphosate

any grass and weeds that sprout through the mulch. As the dead grass decays, it contributes organic matter to the soil.

Where you want flower beds, it is best to till under the dead grass. Any glyphosate residue that comes into contact with soil will be deactivated and will not harm new plantings, except where direct seeding is done.

If you seed flowers, alternative grasses and vegetables, remove the dead grass and roots. Residue in the dead plant material can interfere with seed germination. An alternative is to thoroughly rototill the dead grass into the soil and wait until the grass has fully decomposed. If kept moist (but not wet), this may take one month to six weeks in warm weather.

Note that xeric plants are similar to high water plants during establishment. They require regular and relatively high amounts of water after transplanting or seeding. Only after xeric plants are well established can they be gradually weaned and watered more sparingly. Consider water availability when deciding the timing of a change from a moderate or high water using landscape to a xeriscape.

## Drip (micro-irrigation) Systems

Drip or micro-irrigation systems can be a good way to water any type of plant except turf. Low pressure, micro-irrigation systems apply water slowly and close to the ground. This eliminates waste from water blowing off-target and reduces water use. The boundary between sprinklers and drip irrigation has blurred with advancements in micro-irrigation to include spray stakes. Most micro-irrigation systems are easy to install and modify. Drip irrigation kits are available at most garden centers. They allow you to water plants separately with emitters, or water groups of plants with micro-spray stakes or tapes that ooze water along their entire length. You can enlarge the system as plants grow or as new plants are added.

Use drip systems to maintain constant moisture in the plant root zone. Do not use them to “water in” new plantings. New plantings need rapid, deep watering that is best done by hand. Once the soil has settled around new plants, the drip system can maintain moisture. (See 4.702, Trickle Irrigation for the Home Garden.)

## Practices to Avoid

Do not group plants with different water needs together in the same irrigation zone. You will not be able to meet the water needs of any of the plants resulting in poor plant growth or death. A common mistake is to group a high water use plant such as a spruce together with a low water use pine. “Hydrozone” plants by grouping plants with similar water needs together so they can be effectively watered for best plant health.

When removing areas from turf, do not cover them with solid sheet plastic and gravel, rock or volcanic cinder. Plastics shed water and create wasteful runoff. They exclude water and essential air exchange to plant roots, increase evaporation from surrounding areas by raising local soil and air temperatures, and can cause root injury due to heat buildup.

Keep rock or gravel areas to a minimum. They tend to increase air and soil temperature. Use weed barrier fabrics (geotextiles) available in garden centers. These materials allow water penetration and air exchange. Cover landscape fabrics with mulch.

Instead of rock and gravel, consider organic materials such as wood chips and chunk bark. They give a natural look and help retain moisture, as well as hold weeds in check. Use mulch either with or without a landscape fabric to save water.

Rock may be required to cover a steep slope where wood chips and gravel may wash away. In these cases, use natural river bed cobble of varying sizes. Lay rock over a weed barrier fabric in much the same way as if you were constructing a rock wall.

Another option for steep slopes is to install a natural rock garden with water-conserving alpine plants. For more information, see 7.401, *Rock Gardens*. Terracing steep slopes is another option to consider.

**Table 1: Low ground covers for hot, steep slopes.**

Scientific Name	Common Name
<i>Achillea tomentosa</i>	Woolly yarrow
<i>Artemisia schmidtiana</i> 'Silver Mound'	Silver mound sage
<i>Buchloe dactyloides</i>	Buffalograss
<i>Callirhoe involucrata</i>	Prairie winecups
* <i>Cerastium tomentosum</i>	Snow-in-summer
<i>Delosperma species</i>	Ice plant
<i>Festuca ovina glauca</i>	Blue fescue
<i>Gazania krebsiana</i> 'Tanager™'	Tanager™ gazania
<i>Juniperus horizontalis</i> 'Wilton' ('Blue Rug')	Blue rug juniper
<i>Juniperus sabina</i> 'Buffalo'	Buffalo juniper
<i>Juniperus sabina</i> 'Tamariscifolia'	'Tammy' juniper
<i>Oenothera missouriensis</i>	Ozark primrose
<i>Penstemon caespitosus</i>	Creeping or mat penstemon
<i>Penstemon pinifolius</i>	Pineleaf penstemon
<i>Phlox subulata</i>	Creeping phlox
<i>Santolina chamaecyparissus</i>	Lavender-cotton
<i>Sedum speices</i>	Stonecrop
<i>Stachys byzantina</i>	Lambs ear
<i>Thymus pseudolanuginosus</i>	Woolly thyme
<i>Veronica prostrata</i>	Prostrate speedwell
<i>Veronica liwanensis</i>	Turkish veronica

\*Caution: These plants can be invasive if kept too moist.

**Table 2: Plants for narrow planting strips.**

Use any of the ground covers in Table 1 between walks and buildings or on parking strips between sidewalks and curbs, unless shaded. If the area is shaded, use one or more of the following:

Scientific Name	Common Name
* <i>Aegopodium podagraria variegatum</i>	Bishop's weed
* <i>Campanula carpatica</i>	Carpathian harebell
<i>Ceratostigma plumbaginoides</i>	Plumbago
* <i>Convallaria majalis</i>	Lily-of-the-valley
* <i>Galium odoratum</i>	Sweet woodruff
* <i>Lonicera japonica</i> 'Halliana'	Hall's Japanese honeysuckle
<i>Mahonia repens</i>	Creeping Oregon grape
<i>Polygonum affine</i>	'Border Jewell' polygonum
<i>Thymus pseudolanuginosus</i>	Woolly thyme
<i>Vinca minor</i>	Periwinkle

\*Caution: These plants can be invasive if kept too moist.