

inexpensive alternative to drip irrigation. Soaker hoses perform best when the water flow rate is low. Soil moisture should be monitored to determine when enough water has been applied.

What type of sprinkler should I use?

Use a low-angle sprinkler that produces large drops of water close to the ground, rather than an oscillating sprinkler or a sprinkler that produces a mist or fine spray. This will help to minimize evaporation. Sprinklers with adjustable spray patterns are useful for irregularly shaped areas (or just use the hose). Use a timer so you don't forget to turn it off.

How should I manage my automatic sprinkler system for water efficiency?

Automatic sprinkler systems can provide an efficient method of irrigating lawns because controllers turn the system off after a predetermined amount of time, so a measured amount of water is applied. However, don't just set it in the spring and leave it all season! Adjust run time and frequency of the system monthly to respond to changing rainfall and temperature conditions. Install rain shut off devices or moisture sensors to avoid unnecessary watering. Adjust sprinklers to eliminate overspray on pavement. Don't assume that all plants have the same watering requirements. Reduce the run time of sprinklers on shrubs, which may not need as much water as grass. Shady areas may not need as much water either. To minimize runoff, adjust the precipitation rate of the sprinkler head so the soil has enough time to absorb the water. Trim overgrown shrubs or other objects obstructing the spray pattern. Some municipalities offer free irrigation audits. Otherwise, contact a professional landscape irrigation specialist for a maintenance check.



Bur Oak

What maintenance is required for my automatic sprinkler system?

Check sprinkler heads regularly to remove dirt or debris that may be clogging the nozzle and to make sure they are working at the proper pressure and not leaking. When spray heads are inactive they should be as close to the ground as possible to avoid damaging them with lawn mowers. Repair or replace broken heads, valves, seals, and pipes. Make sure the last group of sprinklers shuts off completely when the next group of sprinklers turns on. If not, check the valves. Once a month run the sprinklers for a short time on each cycle while you are at home to make sure they are working properly.

What features should I look for in an automatic sprinkler system?

The controller of new sprinkler systems should have a multiple scheduling option, a rain-shutoff device, a water budget feature (which allows percentage adjustments without having to reprogram), and test functions.

Design a Water-Wise Landscape

What is the best way to reduce watering?

Plant water-wise, well-adapted and/or native shrubs and trees! Plant bermuda, buffalo grass, or zoysia, which are all drought-tolerant. Choose plants that are drought-tolerant (or at least have low water requirements), heat-tolerant, and are tolerant of the minimum winter temperatures in your local area. Instead of grass, put drought-tolerant ground cover in areas that are narrow, small, sloping, odd-shaped, or close to pavement. Limit turf areas to those needed for practical uses. Many cities provide lists of water-wise plants and some offer landscaping rebates. Group your plants into irrigation zones according to their water requirements (hydrozoning) so you don't overwater one type of plant to meet the needs

of another (for instance most shrubs don't need as much water as most grass). If you have to have a few thirsty plants, group them together and place them near your house. Native plants are more resistant to local plant diseases and pests. Contact your County Extension Agent, your water-wise landscape professional, or your city or water supplier for recommendations of water-wise plants that are adapted to your area of the state and additional information on efficient landscape water use.



Mountain Laurel

This brochure was developed by the Texas Water Development Board in cooperation with the City of Austin Water Conservation. Some reference material was adapted from "Handbook of Water Use and Conservation" by Amy Vickers (WaterPlow Press, 2001). Plant illustrations by Nancy McGowan.



BEING WATER-WISE OUTDOORS



Lantana

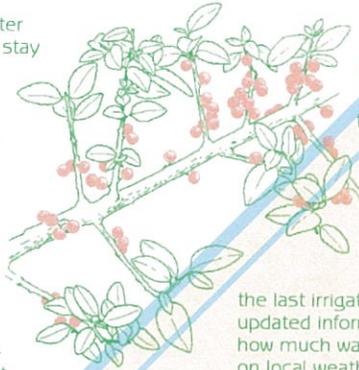
WHY CONSERVE WATER?

According to the Texas State Water Plan, Texas' existing water sources will meet only 75% of the projected water demand by 2050. We must use our precious water resources more efficiently or we will have more frequent and more severe water shortages, especially during droughts and hot Texas summers when water use is 1.5 to 3 times greater than winter use. In the summer, outdoor water use can account for 50 to 80 percent of home water use! Much of this water is wasted through inefficient landscape watering practices. Using water more efficiently will also save energy and money, and protect the quality of life of future generations. We must be responsible and conserve water now.

Water-Wise Steps to Follow

Many Texas water utilities charge higher rates during the summer or increase rates in increments based on use. Reducing your outdoor water use by following these steps can produce substantial savings in your water bill.

1. Determine how much water your landscape needs to stay healthy.
2. Use water-wise landscape maintenance practices such as proper mowing, mulching, and moderate fertilizing.
3. Minimize water evaporation by using the most efficient equipment for each situation and keep that equipment well-maintained.
4. Design a water-wise landscape by planting drought-tolerant grass and choosing plants that are native or well adapted to the climate conditions in your area.



Yaupon
Holly

Water-Wise Landscape Watering

When should I water?

Pay attention to signs of stressed grass, such as a dull green color, footprints that remain visible after walking on the lawn, or curled leaf blades. Water only after the top 2" of the soil has dried out. Check moisture by feel with a soil probe or a screwdriver.

What time of day should I water?

Evaporation loss can be 60% higher during the day, so water during the early morning or in the evening. Do not water on windy days. Watering at night does not contribute to brown patch fungus, which is caused by overwatering and high fertility.

How often should I water?

Proper watering once every five days or longer will help grass and shrubs develop deep roots (it is especially important to start this during the spring when root growth is at its peak). Over-watered turf will have a short root system and will not be drought tolerant,

but it can be trained to grow deeper roots and be more drought tolerant by adjusting it slowly to successively longer periods between waterings.

How long should I water?

To determine how long you should run your sprinkler, place 3-5 empty straight-edged cans at different distances away from the sprinkler. Run the sprinkler for 15 minutes and measure the amount of water collected in each can. Calculate an average water depth and determine how long it will take to apply 1" of water, which will keep most Texas grasses healthy in the summer. Don't forget to account for any rainfall since

the last irrigation. Some cities have daily updated information online or by phone about how much water should be applied based on local weather conditions. To avoid runoff on sloping areas, place sprinklers near the top of the slope and apply water slowly and intermittently ("cycle-soak").

What should I water?

Only plants! Don't water the sidewalks and driveways. Use a broom to sweep debris away. This can save 30 gallons per 5 minutes of work!

How can I use rainwater?

Harvest it! Funnel the water from your gutters into a rainbarrel and save it for a sunny day! Rainwater is free, and is better for your plants because it doesn't contain hard minerals. Also the pH of rainwater may be better for plants.

Water-Wise Landscape Maintenance

How long should my grass be?

Don't scalp your lawn! Taller grass holds moisture better, encourages deeper root growth, and makes it less susceptible to browning! Keep grass 3 inches tall during the summer (however, more than 3" of height stresses the grass).

When should I mow?

Cut grass only when it is dry, keep mowing blades sharp, and don't cut more than 1/3 of its length at one time.

What should I do with my grass clippings?

Don't bag your clippings! Mulched grass clippings break down fast and do not cause thatch buildup in turf. They also help hold in moisture, reduce evaporation, moderate temperature and give nutrients back to the lawn.

How can I conserve soil moisture?

Use lots of mulch, it will make your shrubs and young trees more tolerant to scorching Texas heat! One to three inches of mulch retains moisture longer than bare ground, reduces run-off, helps moderate soil temperatures, aids in root development, reduces erosion, slows weed growth, prevents soil compaction, and makes your landscape beautiful. Rock and gravel in large, hot sunny areas radiate heat from the sun, increasing temperatures and water losses from plants and soil. Place mulch directly on the soil or on weed barrier fabric that can "breathe." Avoid using sheet plastic in planting areas. Top dressing (applying a thin layer of compost to the surface of the lawn) functions like mulch for your lawn. It increases organic content, and protects shallow grass roots.

What should I know about fertilizing?

Contact your County Agricultural Extension Service or local water-wise nursery professional for a soil kit and recommendations for the ratio of nitrogen, phosphorus, and potassium that should be in your fertilizer. The right ratio of nutrients helps grass withstand stress, uses less water, and reduces excess nutrient runoff. Spring and fall applications of fertilizer help to develop good root systems, which keep your grass more drought-tolerant. Too much fertilizing causes excessive growth, creating more demand for water, more thatch, and the need for increased mowing frequency. Many

people apply excess nutrients, which simply run-off and pollute local waterways. Leaving grass clippings on the lawn reduces the need for chemical fertilizer.

How else can I improve my landscape?

Improve the soil! If your original soil is rocky, sandy, shallow, heavy clay, or has little organic matter, it can be improved by adding several inches of high quality loam soil and 2-3 inches of organic matter such as mulch or compost. High quality soil helps reduce irrigation needs by retaining water better when added to sandy soil and by absorbing water better when added to clay soil. Unless the soil is damaged or depleted, native and well-adapted plants may not require imported soil. Shape the soil to protect against erosion and use conditioners to promote water penetration and retention. Shape the soil into earthen basins around shrubs. Aerate the lawn once a year. Weed the lawn and garden as needed. Weeds rob plants of valuable water.

How else can I minimize water use?

Cover pools and spas when not in use to lessen evaporation. In the summer in Texas a 30 ft by 15 ft pool can easily lose 1.5 inches of water a week or 1,800 gallons of water a month! Backwash your filter only as necessary. Backwashing wastes as much as 150 gallons of water, so consider using cartridge type filters, which do not require backwashing. Decorative fountains should be turned off on windy days and during drought.

Water-Wise Irrigation Equipment

What is the most efficient irrigation system?

Drip irrigation is the most efficient method of watering for non-turf areas such as bedded plants, trees or shrubs. Drip systems minimize or eliminate evaporation, impede weed growth, and may help prevent diseases caused by under or overwatering. Tubing should be inspected regularly for damage, leaks, and debris that may have clogged the lines. Soaker hoses are an easy and



Texas
Redbud