

Saving Water in Your Landscape: Best Management Practices for Landscape Water Conservation

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The Georgia Urban Agriculture Council

Landscapes add beauty and value to your home while providing important environmental benefits. The plants in a landscape add valuable oxygen and remove carbon dioxide from the atmosphere. They can also keep our homes cooler in summer, reduce erosion and stormwater run-off, and provide wildlife habitats. **Research has shown that a properly planned landscape that has been carefully installed and properly managed will be healthier, less prone to insects and diseases, and will require less irrigation.** Today, the Georgia urban agriculture industry is a leader in environmental conservation and is working to create “Sustainable Environments” in our cities and residential communities. The Georgia urban agriculture industry is also urging citizens to “Go Green” and to join in this environmental effort by implementing simple landscape best management practices, from planning to managing your landscape, outlined in this publication. Together, we can make a difference!

Planning your Landscape for Water Conservation

- **Test the soil.** - The first step in planning your landscape should be to test the soil. A soil test will tell you how to improve the soil to enhance nutrient uptake by plants. Soil testing is available through your local county Extension office and some retail garden centers. To locate a Cooperative Extension county office, visit <http://www.caes.uga.edu/extension> or call **1-800-ASK-UGA1**.
- **Where’s the water!** - Identify your primary source of water (municipal, well, surface) and explore alternative ways of obtaining water for irrigating plants, such as rainwater harvesting and storage, collecting air-conditioner condensate, and rain gardens. The average annual rainfall for Georgia ranges between 50 and 60 inches, so harvesting and saving rainfall for landscape use during dry periods can reduce the strain on all water systems. If you have an irrigation system, investigate using alternative water sources. You can also have an irrigation audit performed by a professional to maximize the efficiency of your existing irrigation system.
- **“Right plant in the right place”** - When selecting plants for your landscape, make lists of the plants based on their water needs (low, medium, or high) and sunlight requirements. By doing so, you are grouping plants with similar water and light needs in the landscape. This allows you to match water needs with irrigation and reduce the water applied to areas with plants having low water needs. This will also improve the health of individual plants and reduce disease and environmental stress by preventing over-watering and under-watering.
- **Use the land wisely.** - When planning your landscape, place plants with lower water needs at higher elevations and plants with higher water needs in flat areas or at lower elevations. This is needed because irrigating sloped land will result in less efficient irrigation (higher runoff and erosion). Also catalog the sunlight patterns throughout the day and plant sun-loving plants where they get 6 to 8 hours of full sun, and shade-loving plant where they will be shaded from the hot afternoon sun.

Proper Planting Can Reduce Water Needs

- **Soil amendments are key.** - Organic amendments improve the physical and chemical properties of the soil. They not only help the soil hold water and nutrients, they also improve water movement throughout the soil. This results in a healthier plant environment, allowing easier root development and fewer soil-related problems. Till/ incorporate 2.5 to 4 inches of organic amendment (compost) to a maximum depth

of 8 to 12 inches. This will improve the drought tolerance of landscape plants. **Did you know -- For every 1% increase in organic matter content, an acre of soil can hold as much as 16,500 gallons of water!**

- **Mulch, mulch, mulch!** – For trees and ornamentals, apply 3 to 5 inches of mulch or compost on the soil surface after planting. Mulch not only conserves moisture, it also maintains a uniform soil temperature and reduces weeds that compete for light, water and nutrients. Fine-textured mulches and/or compost prevent evaporative water loss better than coarse-textured mulches. The roots of established trees and shrubs extend two to three times their canopy spread, so mulch as large an area as possible to trap the maximum amount of moisture in the soil.
- **Water it in (threes)!** - When planting, remember that watering is a key part of the planting process. First, water the plants in their containers just before planting. To do this, set the containers on a turfgrass area or planting bed instead of an impervious surface so that excess water draining from the containers benefits the landscape and makes “every drop count”. Then, add additional water to settle the soil and eliminate air pockets as you fill the planting hole with soil. Finally, water again after planting. These three steps will reduce transplant shock and give the plant a head-start on becoming established.
- **Be extremely careful when planting around established plants.** - When planting, avoid digging under established trees or shrubs and injuring their roots. It’s estimated that 80% of the roots of established trees and shrubs are within the top 12 inches of the soil surface, so digging can cause severe stress to plants. Fill dirt or topsoil added over the roots of established plants can smother their roots and cause stress. Plants stressed by these cultural factors are more likely to show drought stress symptoms.
- **Prune those roots.** - If you remove the plant from the pot and see a mass of tangled roots, use a knife to make four to six vertical cuts around the root ball, then use your hands to pull apart the roots. Although this appears harmful to the plant, it actually encourages new roots to form, allows water to move into the root ball, and results in more rapid plant establishment.

Managing Your Landscape for Perpetual Water Savings

- **Use your eyes!** - Watch for moisture stress symptoms before deciding when to irrigate. An abnormal gray-green color or obvious wilting are good indicators that a plant needs moisture. **Confirm** this by digging a small hole to see if the soil is wet, moist, or dry. Watering plants only when they require it will result in a deep, strong root system that preconditions the plant to tolerate dry periods.
- **Timing is everything.** - The best time to irrigate is at night or early morning (9 P.M. to 9 A.M) to conserve moisture and to reduce evaporative losses of water. Call your local water provider for authorized watering times.
- **Test the soil (again).** - A soil test provides the best gauge for fertilization requirements in the landscape. Healthy plants are more water efficient during dry periods. Never fertilize according to the calendar, but base it on the needs of plants and nutrient levels in your soil. Excess fertilizer can not only injure roots but also can become an environmental pollutant when it runs off into storm drains and nearby waterways.
- **Know your fertilizer.** - Slow-release type fertilizers and/or compost release nutrients slowly over an extended period of time resulting in more uniform growth rates and more water-efficient plants. Excess nitrogen causes rapid growth and increases a plant’s demand for water.
- **Keep the mulch coming.** - Maintain an average mulch depth of 3 to 5 inches. This may require you to add 1 to 3 inches of additional mulch each year. Maintaining a uniform layer of mulch over plant roots is one of the best water conservation practices for your landscape.
- **Keep you turfgrass tough!** – When properly planted and managed, turfgrass is more resilient to periodic drought conditions than many people assume. Regardless of drought conditions, allow the grass to dry and become stressed before applying irrigation. This actually causes the grass plant to explore deeper soil depths for moisture and nutrients. It is best not to irrigate based on a set schedule, but rather to guide irrigation based on plant need. Cultural practices like aeration, mowing, and fertilization can affect the root depth. Periodically aerify (i.e. as infrequent as every other growing season) to improve water and air

entry into the soil. To encourage deep rooting during periods of heat or drought stress, raise the mowing height to the upper limits of recommend mowing heights. Similarly, during periods of stress use the lower end of nitrogen fertility recommendations and be sure other nutrients, like phosphorus and potassium, are adequate for turfgrass growth.

- **Where is that water going?** - To avoid wasting water, use a hand-held hose, soaker hose or drip irrigation to water trees, shrubs and flowers, especially those planted on slopes. Water only the soil, not the leaves and flowers. To avoid runoff, apply water gently and slowly at a rate the soil can absorb. When using sprinklers, make sure that the water reaches your lawn and plants, not the house, sidewalk, driveway or street. Retrofit your irrigation system with low volume emitters and a rain sensor that will prevent it from running during rainfall. Use a broom or blower instead of a water hose to clean your driveway or sidewalk.

REMEMBER!! The water we save today is an investment in our future!

For additional water saving tips and expanded discussion on water saving practices for the landscape, see University of Georgia Cooperative Extension Bulletin “Best Management Practices for Landscape Water Conservation” It can be obtained at the following web site or from your local county Extension Office.

<http://pubs.caes.uga.edu/caespubs/pubcd/B1329/B1329.htm>



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