

# CONSERVING WATER IN THE HOME LANDSCAPE

Water is the lifeblood of plants. It is required for seed germination, plant growth, photosynthesis, nutrient transport and temperature control. Water also maintains turgidity, which enables leaves to retain their shapes.

As Florida's population grows and the state becomes more urbanized, the demand on limited water resources steadily increases. Saltwater intrusion into freshwater wells further reduces the state's available water supply. Homeowners who want to continue watering their landscape plants must practice water conservation now rather than waiting until an emergency arises

The average volume of rainfall in Florida ranges from nearly 52 inches on the central and northern peninsula to almost 65 inches in the panhandle west of Tallahassee, and along the southeast coast below Lake Okeechobee. More than half of Florida's total annual rainfall is concentrated in the central and southern peninsula between June and September. During the winter and spring, lack of rainfall may seriously compromise plant development. But even during the rainy season evapotranspiration (water loss from plants and soil) may mandate supplemental watering. Soils with a limited capacity to retain moisture must be irrigated during periods of low rainfall.

Variables such as plant species, soil type, time of year and weather conditions determine when and how much plants should be watered; consequently, it is difficult to offer specific watering procedures. However, the following guidelines should help to answer some important questions.

## ***WHEN TO WATER***

Irrigate only when plants need water. During the summer, established plants need no water for three to five days after a rainfall or water application that distributes at least three-fourths of an inch of water. You can wait much longer during the winter or when watering soils of finer texture, such as muck or clay.

Many landscape plants demonstrate their need for water by wilting. If they continue to wilt during the evening, water them the following morning. Some herbaceous plants, such as impatiens and coleus, typically wilt during the heat of the day, even though the soil contains adequate

moisture. These plants transpire (they lose water vapor from their leaves and stems) faster than their root systems can absorb water from the soil. There is no need to water these plants unless they remain wilted during the evening.

Some plants show no early symptoms of drought stress. If drought conditions continue, however, they may exhibit injury symptoms, such as browning of leaf margins or tips and/or leaf drop. Plants should be watered before the appearance of injury symptoms, since at this stage of drought stress they may become severely damaged or even die.

Plants in sandy soils exposed to full sunlight may need water every three to five days. The same plants placed in some shade or in soils of finer texture may need water only once a week, perhaps less often.

Monitor the lawn closely. If it shows signs of wilting, it needs attention. Water immediately if grass leaves curl at the edges or turn a dull bluish-gray.

Lawns should be watered early in the morning, when wind and temperature levels are low. Irrigating during the late morning, at midday and during the afternoon usually results in increased water loss from evaporation. Strong winds that create unequal water distribution are also more likely at these times.

When you decide it is time to water, be sure to comply with local and regional water regulations. In many areas, irrigation is allowed only on certain days and during specified hours. Also check local weather channels for rain forecasts before irrigating. You can save a lot of water by following these guidelines.

### ***HOW MUCH WATER TO APPLY***

When watering, soak the soil thoroughly. Frequent, light sprinklings waste water and do little to satisfy the water requirements of a plant growing in hot, dry soil. Plants watered in this way often develop shallow root systems, increasing their susceptibility to damage if watering is interrupted for a few days.

For most of Florida's sandy soils, one-half to three-fourths of an inch of water is sufficient to wet the root zone. Because not all soils and plants are alike, however, some adjustments in the amount of water applied may be necessary.

To determine when a sprinkler system has delivered three-fourths of an inch of water, place cans or cartons at intervals within the spray pattern

and continue watering until the average water level in the cans reaches three-fourths of an inch.

### ***WATERING METHODS***

Water should be applied only as fast as the soil can absorb it. Using a hose with water pressure at full force can do more damage than good. Fast-flowing water runs off quickly, carrying away soil and exposing plant roots to direct sunlight. Watering with sprinklers is more efficient.

Whether you are using a sprinkler attached to a hose (hose-end sprinkler) or an automatic sprinkler system in the ground, the efficiency of the system depends on how well it is managed. A hose-end sprinkler may be placed anywhere in the landscape and allowed to run until it has delivered three-fourths of an inch of water. If the sprinkler is moved too soon, water will not reach the root zone. If the sprinkler runs too long, water passes through the root zone and is wasted.

In-ground sprinkler systems may be operated with a time clock or soil sensor; they may also be manually controlled. Scheduling irrigation with a time clock is easy but wasteful. The time clock turns on the system in rain or sunshine, irrespective of whether the plants need water. Soil-moisture sensors often require a lot of maintenance or are inaccurate. A sprinkler system may be manually controlled by setting the time clock to the "off" position and switching the system on when the plants need water. The automatic position on the time clock is useful when you are away from home for more than a few days. By installing a shutoff device that overrides the system when rain falls, you can make the clock operate even more efficiently.

Another watering method is drip or trickle irrigation. Drip irrigation provides plants with a constant supply of water by means of plastic tubing located on or below the ground surface. Low-pressure emitters (nozzles) attached to the plastic tubing slowly release water into the soil around a plant. Wetting only the root zone results in dramatic water savings, limits weed proliferation and accelerates plant growth. Since the plant is not subjected to the wet and dry cycles typical of other irrigation methods, it develops more rapidly.

### ***TIPS FOR CONSERVING WATER***

1. Remove thatch from turf. A thick-thatch layer restricts the movement of water into the soil.
2. Increase mowing height of lawns to allow plants to develop deeper root systems.

3. Keep the lawn mower blade sharp. Sharp mower blades make cleaner cuts that cause less water loss than cuts from dull blades.
4. Control all weeds. Weeds use water that would otherwise be available for desirable plants.
5. Reduce the number of fertilizer applications. Fertilizer promotes plant growth, increasing the need for water.
6. Prune. If the water supply is so limited that plant survival is uncertain, substantial pruning can be done at the peak of a water shortage.
7. Apply wetting agents to the soil to allow it to absorb water uniformly and to prevent dry spots.
8. Use 2-3 inches of mulch on entire beds of shrubs, trees, annuals and perennials.
9. Extend the number of days or weeks between water applications to the longest suitable interval.
10. Soak deeply. Cull plants that are growing poorly. Don't waste water caring for marginal or undesirable plants.
11. Use wastewater free of harmful compounds (borax and trisodium phosphate).
12. Adjust sprinklers to avoid spraying water on sidewalks and streets or into gutters.
13. Keep sprinkler heads clean to ensure uniform water distribution.
14. Check the hose and faucet washers annually, replacing them when worn.

### **DROUGHT-TOLERANT PLANTS**

Using drought-tolerant plants is another way of conserving water in the home landscape. In areas where it is difficult to apply enough water, such as on sandy soil or terrain from which water drains rapidly, drought-tolerant plants offer an alternative. They are also a good choice in areas of the yard that cannot be reached with a hose. Below is a listing of some drought-tolerant plants that may be suitable for your yard.

Drought-Tolerant Plants.		
Common Name	Scientific Name	Section of State to Which Adapted
<b>TREES</b>		
Box Elder	<i>Acer negundo</i>	North
Chaste-Tree	<i>Vitex agnus-castus</i>	North & Central
Chinese Elm	<i>Ulmus parvifolia</i>	North & Central
Crape-Myrtle	<i>Lagerstroemia indica</i>	North & Central

Eastern Red Cedar	<i>Juniperus virginiana</i>	North, Central & South
Golden-Rain Tree	<i>Koelreuteria elegans</i>	North, Central & South
Laurel Oak	<i>Quercus laurifolia</i>	North, Central & South
Live Oak	<i>Quercus virginiana</i>	North, Central & South
Podocarpus	<i>Podocarpus</i> spp.	North, Central & South
Shumard Oak	<i>Quercus shumardii</i>	North, Central & South
Siberian Elm	<i>Ulmus pumila</i>	North & Central
Silk Tree	<i>Albizia julibrissin</i>	North & Central
Tree-of-Heaven	<i>Ailanthus altissima</i>	North
Turkey Oak	<i>Quercus laevis</i>	North, Central & South
Washington Palm	<i>Washingtonia robusta</i>	North, Central & South
SHRUBS		
Chinese Photinia	<i>Photinia serrulata</i>	North
Elaeagnus	<i>Elaeagnus pungens</i>	North & Central
Firethorn (Pyracantha)	<i>Pyracantha coccinea</i>	North & Central
Glossy Privet	<i>Ligustrum lucidum</i>	North, Central & South
Japanese Privet	<i>Ligustrum japonicum</i>	North, Central & South
Juniper	<i>Juniperus</i> spp.	North, Central & South
Leatherleaf Mahonia	<i>Mahonia bealei</i>	North & Central
Red-leaf Photinia	<i>Photinia glabra</i>	North
Shining Sumac	<i>Rhus copallina</i>	North, Central & South
Strawberry Bush	<i>Euonymus americana</i>	North
Yaupon Holly	<i>Ilex vomitoria</i>	North, Central & South
Yellow Elder	<i>Tecoma stans</i>	Central & South
GROUND COVERS		
Junipers	<i>Juniperus</i> spp.	North, Central & South
Mondo Grass	<i>Ophiopogon japonicus</i>	North, Central & South
Weeping Lantana	<i>Lantana montevidensis</i>	North, Central & South
VINES		
Chinese Creeper	Trumpet <i>Campsis grandiflora</i>	North, Central & South
Cross Vine	<i>Bignonia carpreolata</i>	North

Dutchman's pipe	<i>Aristolochia durior</i>	Central & South
English Ivy	<i>Hedera helix</i>	North, Central & South
Japanese Clematis	<i>Clematis dioscoreifolia</i>	North, Central & South
Japanese Honeysuckle	<i>Lonicera japonica</i>	North, Central & South
Trumpet Creeper	<i>Campsis radicans</i>	North, Central & South
Trumpet Honeysuckle	<i>Lonicera sempervirens</i>	North, Central & South
PERENNIALS		
Blanket Flower	<i>Gaillardia aristata</i>	North, Central & South
Periwinkle	<i>Vinca minor</i>	North & Central
Sansevieria	<i>Sansevieria</i> spp.	South
Yucca	<i>Yucca</i> spp.	North, Central & South
ANNUALS		
Annual Phlox	<i>Phlox drummondii</i>	North, Central & South
Baby's Breath	<i>Gypsophila</i> spp.	North, Central & South
Black-Eyed Susan (Coneflower)	<i>Rudbeckia hirta</i>	North, Central & South
Blue-Eyed African Daisy	<i>Arctotis stoechadifolia</i>	North, Central & South
Calendula	<i>Calendula officinalis</i>	North, Central & South
California Poppy	<i>Eschscholzia californica</i>	North, Central & South
Coreopsis	<i>Coreopsis</i> spp.	North, Central & South
Cape Marigold	<i>Dimorphotheca sinuata</i>	North, Central & South
Chinese Forget-Me-Not	<i>Cynoglossum amabile</i>	North, Central & South
Cornflower	<i>Centaurea cyanus</i>	North, Central & South
Cosmos	<i>Cosmos bipinnatus</i>	North, Central & South
Gazania	<i>Gazania linearis</i>	North, Central & South
Globe Amaranth	<i>Gomphrena globosa</i>	North, Central & South
Mexican Sunflower	<i>Tithonia rotundifolia</i>	North, Central & South
Moss Rose	<i>Portulaca grandiflora</i>	North, Central & South
Strawflower	<i>Helichrysum bracteatum</i>	North, Central & South
Verbena	<i>Verbena hybrida</i>	North, Central & South
SUCCULENTS		
Aloe	<i>Aloe</i> spp.	Central & South

Carrion Flower	<i>Stapelia</i> spp.	South
Century Plant	<i>Agave americana</i>	North, Central & South
Crown-of-Thorns	<i>Euphorbia milii</i>	Central & South
Kalanchoe	<i>Kalanchoe</i> spp.	South
Hottentot-Fig	<i>Carpobrotus edulis</i>	Central & South
Ice Plant	<i>Mesembryanthemum crystallinum</i>	South
LAWNGRASSES		
Bahia	<i>Paspalum notatum</i>	North, Central & South