

#2: Water Efficiently

REDUCE WATER BILLS, PEST PROBLEMS, AND MAINTENANCE NEEDS

We all know water is a limited resource and should be used wisely, but we often overwater our landscapes unintentionally. Overwatering does more than deplete the water supply; it also makes plants more prone to disease and pests. By choosing and operating a watering system correctly, you can reduce water bills, decrease plant problems, and lower maintenance requirements. For example, the more you water your lawn, the faster it grows and the more it needs to be mowed. It's also more likely to develop fungal problems that require treatment with pesticides.

Overwatering can also cause water pollution via a process called leaching. Leaching happens when more fertilizer is applied to a landscape than the plants can absorb, or when heavy rains and overwatering cause nutrients to travel quickly through Florida's sandy soils, past plant roots, and into the aquifer. Eventually these nutrients can reach nearby water bodies, disrupting natural systems.

WATER RESTRICTIONS

Florida's five water management districts (WMDs) are state agencies that manage and protect our water resources on a regional basis. The water restrictions issued by your WMD or local government—in many areas, they're in effect year-round—should be followed exactly, as they exist to ensure that there's enough water for everyone.

Restrictions usually limit watering with a sprinkler or irrigation system to certain times on certain days of the week. These times and days may be different depending on your house number, neighborhood, or side of the street. Water restrictions in your area may also be called "irrigation schedules." Water restrictions apply to everyone and every water source in a WMD. (Water use requirements may be different with reclaimed/recycled water.)

Even if it is your assigned day to irrigate, that doesn't mean you should irrigate. Scheduled watering can waste money and water. Don't let the calendar tell you when to water—look to your plants for telltale signs of thirst and turn on your irrigation system manually instead of allowing the automatic controller to run on a set schedule. For information about setting your irrigation controller, visit <http://fyn.ifas.ufl.edu>.

WATER-WISE ADVICE

1. Choose the right plant for the right place

All plants must get the right amount of sun, water, and nutrients to thrive—even natives.

- Select plants suited to your area.

WATER MANAGEMENT DISTRICTS

Figure out what water management district you live in, and follow the water restrictions for your area.

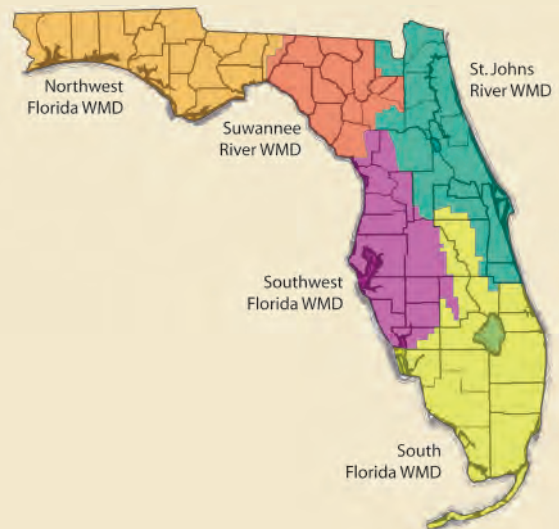
Northwest Florida Water Management District:
<http://nwfwmd.state.fl.us>
(850) 539-5999

St. Johns River Water Management District:
<http://floridaswater.com>
(386) 329-4500 or (800) 232-0904

Southwest Florida Water Management District:
<http://swfwmd.state.fl.us>
(352) 796-7211 or (800) 423-1476

South Florida Water Management District:
<http://savewaterfl.com>
(561) 686-8800 or (800) 432-2045

Suwannee River Water Management District:
<http://www.srwmd.state.fl.us>
(386) 362-1001 or (800) 226-1066



Florida is divided into five water management districts.

- Place plants in the landscape where site conditions match their needs.
 - Group plants with similar water needs together.
2. Water thoughtfully
A drop here and a drop there can add up to a lot of water.

- Always follow any water restrictions in your area.
- Water early in the morning.
- Irrigate plants and grass only when they start to wilt, as allowed by water restrictions.

3. Handwater when possible

Handwatering is usually allowed during water restrictions, because it uses less water than an automatic irrigation system.

- Use a watering can, pail, or hose with an automatic shutoff nozzle.
- Handwater potted plants, shrubs, trees, vegetables, and flower beds.
- Check if your water management district limits handwatering.



Handwater whenever possible.

4. Perform regular irrigation system maintenance

An irrigation system is only as efficient as it's maintained to be.



Perform regular irrigation system maintenance.

- Check for and repair leaks.
- Unclog and replace broken heads.
- Point heads at plants, not driveways and sidewalks.
- Prune plants that interfere with irrigation systems.

5. Calibrate irrigation system

Even an efficient irrigation system can waste water if it's left on for too long. The ideal amount of water to apply to a lawn is $\frac{1}{2}$ - $\frac{3}{4}$ inch. See page 19 for information on how to calibrate your system.



A rain barrel can save excess rainwater for dry times.

6. Make a rain barrel

Rain barrels capture rainwater that flows off your roof. They're easy and inexpensive to make. Instead of watering your plants with water you're paying for, you're using free water!

7. Use microirrigation

Drip or micro-spray irrigation systems apply water directly to the roots of plants, where it's needed, and lose minimal water to evaporation or wind drift.

8. Mulch plants

Mulch helps keep moisture in the soil around your plants. Choose from many different kinds of mulch and apply two to three inches around trees, shrubs, flowers, and vegetables.

9. Mow correctly

How you mow your lawn can have a big impact on how much water it needs. Raise your mowing deck to promote a healthy root system, which will make your grass more drought tolerant.

10. Be a weather watcher

Rain is irrigation, too. Use it to your advantage—it's free!

- Don't water your landscape if it's rained in the past twenty-four hours or if rain is forecast in the next twenty-four hours.
- Purchase a rain gauge to track how much rain your plants are getting.
- Install a rain shut-off device or soil moisture sensor to override your irrigation system when it's raining.

CALIBRATING IRRIGATION SYSTEMS

Follow these steps to determine how much water your irrigation system is applying:

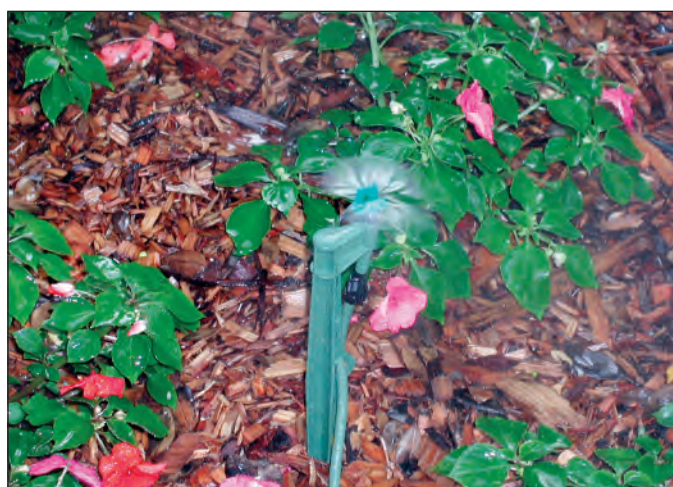
- Set out five to ten flat-bottomed, straight-sided cans (all of equal size). Containers that are three to six inches in diameter, such as cat food or tuna cans, work best for this.
- If you have an in-ground system, place the containers in one zone at a time, scattering the cans randomly throughout the zone. You'll need to repeat this procedure in each zone.
- If you use a hose-end sprinkler to water your turf, place the containers in a straight line from the sprinkler to the edge of the watering pattern. Space the containers evenly.
- If you have a drip irrigation system, place the cans under emitters.
- Turn on sprinklers for fifteen minutes.
- Use a ruler to measure the depth of water in each container. The more precise your measurement, the better your calibration will be. Measurement to the nearest $\frac{1}{8}$ inch should be adequate.
- Find the average depth of water collected in the containers by adding up the depths and dividing by the number of containers.
- To determine the irrigation rate in inches per hour, multiply the average depth of water times four (since you ran the water for fifteen minutes).
- Check your system yearly to make sure it's working properly.



Drip tubing.



Bubbler.



Micro-spray.

MICROIRRIGATION

Microirrigation systems deliver small volumes of water directly to the root zone through low-flow emitters, such as micro-spray jets, bubblers, or drip tubes.

Microirrigation can be a great way to water your plants more efficiently. It can be installed under shrubs and trees, in planting beds, and in containers, but should be avoided in lawns.

- Drip or micro-spray fittings can clog; you may need to filter the water source. Inspect fittings regularly and clean them when necessary. Insects, rodents, and enthusiastic hoeing can damage drip tape or tubing.
- If you already have an irrigation system, your options for converting to microirrigation may be limited. But sometimes low-pressure emitters, such as bubblers, can be adapted to existing sprinkler heads. This may require a pressure regulator at the source to reduce water pressure.
- Although microirrigation equipment releases small amounts of water, overwatering is still possible if the system is left on for too long.

SOAKER HOSES

While plants are becoming established in your yard, you may want a temporary watering system—it's convenient and usually worth the effort. Temporary watering systems could be a soaker hose or just a garden hose attached to a sprinkler.

Unlike regular garden hoses, soaker hoses seep or leak water along their entire length, delivering it to the soil around the plants. Lay the hose on top of the soil, or bury it slightly in the soil or mulch. Landscape staple pins work great for holding the hose in place. If you decide to use a soaker hose or other temporary watering system, purchase a battery-powered timer to hook up to the spigot. The timer will help you make sure you don't leave the water running longer than it needs to.

Use the soaker hose until your plants are established, and then install or use a more permanent irrigation system if needed. Soaker hoses aren't recommended for long-term use because they distribute water inefficiently.

RAIN & SOIL MOISTURE SENSORS

Rain and soil moisture sensors are shut-off devices that provide a great way to save water in your landscape. These devices detect when a certain amount of rain has fallen or when a certain level of moisture is present in the soil. They will then shut off your irrigation system, making sure it doesn't run when it's not needed.

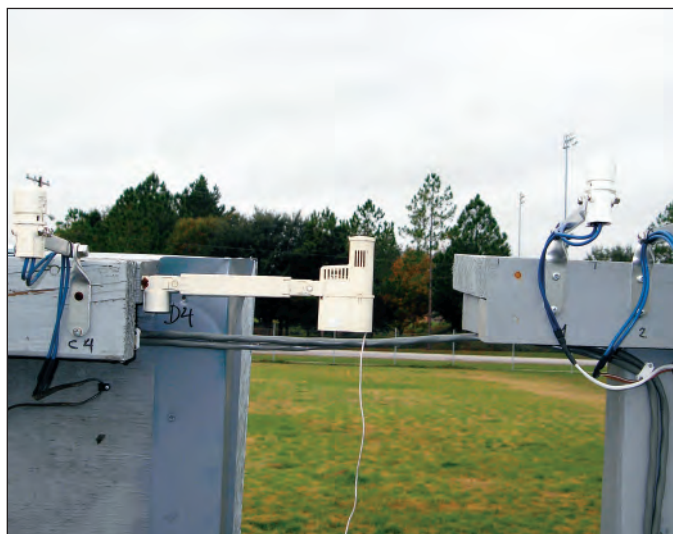
Any person who purchases and installs an automatic landscape irrigation system must properly install, maintain, and operate technology that inhibits or interrupts operation of the system during periods of sufficient moisture.

A licensed contractor who installs or performs work on an automatic landscape irrigation system must test for the



Soil moisture sensor.

correct operation of each inhibiting or interrupting device or switch on that system. If such devices or switches are not installed in the system or are not in proper operating condition, the contractor must install new ones or repair the existing ones and confirm that each device or switch is in proper operating condition before completing other work on the system.



Rain sensors.

These devices, and others like “smart” control systems such as soil moisture sensing or evapotranspiration-based controllers, conserve water, save you money, and reduce wear on your irrigation system. They can also help prevent turf disease and other problems caused by excess moisture. Make sure yours is working properly, or replace or repair it if needed.

ESTABLISHING PLANTS

Remember to water your new plants thoroughly when establishing them. In North and Central Florida, you'll

need to irrigate 3-gallon plants two to three times per week. In South Florida, irrigate three to four times per week. For each watering, apply 3 liters (about .8 gallons) of water. Irrigate your new plants until they're established, which usually takes fifteen to twenty weeks. You may need to handwater plants to comply with local water restrictions. Once your plants are established, water on an as-needed basis, continuing to comply with the irrigation schedule mandated by your water management district.

ESTABLISHING TREES

Newly planted trees need regular irrigation to rapidly grow the roots necessary for proper establishment. For trees planted in spring or summer, water two to three times per week. After the first few months, provide weekly irrigation until plants are fully established. Irrigations should be 2 to 3 gallons of water per inch trunk diameter. For example, a 2-inch tree should be watered 4 to 6 gallons each irrigation. Again, handwatering may be the only way you can follow this schedule and still comply with water restrictions.

DROUGHT-TOLERANT LAWN

All turfgrasses need water to remain green, whether it comes from rainfall or supplemental irrigation. Drought-tolerant grasses will go into dormancy during dry periods, growing more slowly or turning brown until conditions are favorable for growth. When enough soil moisture returns, these grasses can usually recover from drought-induced dormancy, rather than dying. Bahiagrass and centipedegrass are more drought tolerant than zoysiagrass and St. Augustinegrass, but for all grass types, proper watering and mowing practices will encourage the grass to develop deep roots that aid recovery from drought stress. In other words, you can make your lawn more drought tolerant no matter what kind of grass you have.

When rainfall is inadequate, grasses will require supplemental irrigation to remain green. But you can train your lawn to use less water by following these easy steps:

- **Mow your lawn at the highest recommended setting** for your grass type (see page 13) and don't remove more than one-third of the grass blade at each mowing. Mowing high results in deeper roots, which is important in developing drought tolerance and minimizing irrigation requirements.

- **Keep your mower blades sharp.** Leaves cut by a dull blade will need more water.



Keep mower blades sharp and clean.

- **Adjust irrigation frequencies** by season, weather conditions, and your region of the state. Don't irrigate until you see signs of wilt, making sure to comply with water restrictions.



Let your lawn tell you when to water.

- **Water infrequently and deeply.** This will train the grass roots to grow deep. Make sure you don't overwater—just fill the root zone with $\frac{1}{2}$ - $\frac{3}{4}$ inch per application.
- **Spot-treat pest problems only as needed.** Chemicals can cause damage and stress to the grass, which can increase its need for water.

For more information on caring for your lawn, see <http://gardeningolutions.ifas.ufl.edu>.