FESC
Florida Energy Systems Consortium

TIPS FOR BECOMING A WATER-WISE FLORIDIAN

Introduction

Figure 1. Ichetucknee River-Florida's springs provide fresh water for people and wildlife as well as recreation. UF/IFAS Photo by Audrey Wynne

Florida is endowed with magnificent water resources, ranging from crystalline artesian springs to an abundance of rivers, lakes, wetlands and marshes. The underground Floridan Aquifer is the most bountiful fresh water-bearing formation in the Southeast U.S. The incomparable Everglades supports a world-renowned ecosystem while also supplying fresh water for South Florida. Before settlement, half of Florida's landscape was covered in wetlands. Settlers directed great effort and energy to ditching, draining and diverting water. Today's water picture is quite different. Florida in the 21st century joins the ranks of places in the world that are using fresh water more quickly than water is replenished by natural processes. Even though the Sunshine State receives an average of 55 inches of rainfall a year, some locations in Florida are experiencing water shortages as withdrawals from surface and underground sources exceed natural recharge. In addition, water quality problems exist in Florida, with many of the state's natural water bodies determined to be "impaired". Conserving water and preventing water pollution **now** are much more cost effective than developing new supplies, expanding use of alternative sources and treating polluted water. The following recommendations identify easy ways that Floridians can conserve water and prevent water pollution. Following these suggestions will save you money, conserve water resources, protect water quality, and contribute to the present and future water security of your community.

10 Ways to Save Water

Conservation is more cost effective, energy efficient and environmentally friendly than development of new water resources. Unlike supply-side solutions, conservation keeps more water available for future use and helps maintain flow levels in rivers, lakes, springs and aquifers, protecting fish and wildlife dependent on these flows. Far and away, the largest water savings from public water supply can come from reducing the use of water outdoors to maintain lawns and landscapes. It is important, however, to conserve and use water efficiently indoors as well. Here are ten ways to save water in your homes, lawns and landscapes.

1. Start keeping track of your water use.

Do you know the size of your water footprint? Consciously tracking your water consumption is the first step to reducing it. If you are on a public water supply, tracking your usage is easy: just look at your water bill. Most water utilities in Florida measure and bill water use in 1,000 gallon, or kilogallon (KG) increments. As you begin to track your monthly use, you will begin to discern patterns. Does your use spike in April, May, and September? This is when outdoor water use peaks for most Floridians.

To look at your water use in another way, you can estimate your daily personal use by dividing your monthly household use in gallons by the number of days in the payment period and the number of people in your household (although there may be variations in individual use among different household members!). If you are really curious about understanding your daily water use patterns precisely, you can also take note of the reading on your water meter at the start and end of a typical day. Be sure to consider both weekdays and weekends.

If you get your water from a private well, you can install a meter on the well to monitor your use, or you can estimate it with an online home water use survey, such as the one at this website: http://www.sjrwmd.com/waterconservation/survey.html. This survey is a fun, interactive way to learn how your household practices contribute to your overall water use.

By keeping track of your water use, you can then develop a personal water conservation plan, put it into action, and measure your progress.

2. *Follow Florida-Friendly Landscaping techniques.*

In Florida, irrigation of lawns and landscapes represents the single largest use of water from municipal water supplies. A study reported in the *Journal of Irrigation and Drainage Engineering* showed that Central Florida homes, with an average cover of 79% turfgrass in their landscaped area, used 74% of their total fresh water consumed for irrigation purposes[1]. The best way to conserve water is with a landscape that can survive primarily on rainfall, with supplemental irrigation applied only during times of severe drought. If your landscape consists of plants that do well in the existing site conditions, and your landscape has healthy soil that is not compacted, the need for irrigation will be minimal. Florida-friendly landscaping techniques include, among others, choosing plants that are well adapted to the site, mulching to retain moisture, and grouping plants based on their water needs. Contact your local Extension office for suggestions on plants that are right for your location.

Follow the recommended schedule for watering shrubs and trees through establishment and remember that once they are established, watering can be discontinued for most trees and shrubs. For details, consult http://hort.ifas.ufl.edu/irrigation/Results.shtml. If lawn areas are a personal priority, choose grass that is hardy and requires less watering. Also, when mowing, "cut it high and let it dry"— cut grass at the highest setting on your mower and allow the cuttings to stay where they fall. This will encourage deeper root growth and reduce the water and fertilizer needs of the grass. Ask your local Extension agent for information about what's most appropriate in your county and most suitable for your particular site conditions.

Do you have further questions? See "Landscape Elements for a Florida-Friendly Yard" at http://edis.ifas.ufl.edu/ep424 and "Homeowner Best Management Practices for the Home Lawn" at http://edis.ifas.ufl.edu/ep236 for tips on making your yard more water wise and ecologically friendly. Or contact your county Extension office for a wealth of resources on home lawns, landscapes and gardens.

3. *If you use an irrigation system, maintain it regularly.*

For an automatic sprinkler system, make sure the rain shut-off device (required by Florida law) is in working order and is not blocked by roof overhangs, shrubs or trees[2]. Also, set your automatic irrigation system to apply no more than one-half to three-quarters of an inch of water each time you irrigate[3]. Most importantly, irrigate only when needed. Instead of watering on a schedule, set the system to manual operation and turn it on only when half of your lawn area shows signs of wilting — leaf blades folded in half, blue-gray color and footprints that remain on the lawn. If you have an old in-ground sprinkler system, consider retrofitting to a new system. . Consider replacing older sprinkler heads with more efficient models such as rotary nozzles or replacing sprinkler head zones with microirrigation in landscaped beds. These actions can greatly reduce your outdoor water use since newer systems are far more efficient. Stay aware of and abide by regional and local water restrictions. For more information on properly maintaining irrigation systems, see the publication *In-ground Irrigation Systems: Design, Use and Maintenance* from the St. Johns River Water Management District: http://floridaswater.com/publications/pdfs/br_efficientirrigationsystems.pdf.

---

[1]Haley, M.B., Dukes, M.D., and Miller, G.L. (2007). Residential irrigation water use in Central Florida. *Journal of Irrigation and Drainage Engineering*, 133(5), 427–434.

[2] Southwest Florida Water Management District. (n.d.). Easy tips to tune up your irrigation system and rain shutoff device. Retrieved April 20, 2011 from http://www.swfwmd.state.fl.us/conservation/tips/tune-up-your-irrigation-system/

[3] Trenholm, L.E., Unruh, J.B., and Cisar, J.L. (2009). How to calibrate your sprinkler system. (EDIS Fact Sheet ENH 61). Gainesville, FL: University of Florida, Cooperative Extension Service, Institute of Food and Agricultural Sciences. Retrieved April 20, 2011 from http://edis.ifas.ufl.edu/pdffiles/LH/LH02600.pdf

4. Harvest rainwater.

Rainwater harvesting is an age-old technique that is being rediscovered as a useful water conservation tool. You can harvest rainwater from your rooftop in several ways, from installing a large cistern above or underground to placing rain barrels at the end of your gutters or downspouts. Collecting rainwater for watering plants spares potable water for other important uses and reduces stormwater runoff from your yard. See the Florida Yards and Neighborhoods document "How to Build a Rain Barrel" at http://fyn.ifas.ufl.edu/materials/FYN-HowToBuildARainBarrel.pdf for more information.

Figure 2. Rain barrels can supply a large portion of watering needs for many homeowners. Photo by Kathryn Ziewitz

5. Check and maintain your toilet.

Indoors, toilets are the largest water user for a typical household. Americans flush an estimated 4 billion gallons of treated water down the toilet each day[4]. Toilets made before 1994 use anywhere from 3.6 gallons per flush (gpf) to 8 gpf, while low-flow toilets are currently mandated by federal law to use 1.6 gpf or less. A family of four who replaces their 1980s-era toilet (using 3.6 gpf) with a 1.6 gpf model can save 14,000 gallons of water per year[5]. Even better are high efficiency toilets (HETs), which use 20% less water than the federal standard. HETs come in single flush or dual flush models, both of which are rated at 1.28 gpf or less. Single flush toilets have one flush button/lever while dual flush toilets often have two buttons/levers: one for liquid waste and one for solids.

If your home was built before 1994 and the toilet has never been replaced, then it is very likely that you do not have a 1.6 gpf toilet. Check to see if your water utility offers any rebates for replacing old, inefficient toilets with new ones. See EPA's WaterSense Partnership Program rebate finder at http://www.epa.gov/watersense/rebate_finder_saving_money_water.html for more information. Look for the EPA's "WaterSense" label to find toilets and other plumbing fixtures that use even less water than the federal standard. If you want to learn more about performance standards for new toilets, visit this website: http://www.cuwcc.org/MaPtesting.aspx.

If replacing your toilet isn't an option, make sure that your toilet isn't leaking and replace the flapper if necessary. Here are some tips for maximizing your toilet's water efficiency:

Figure 3. Avoid wasting water by repairing leaky faucets. UF/IFAS Photo by Thomas Wright

- Regularly check for and repair toilet leaks.
- Avoid using caustic toilet bowl cleaners such as toilet tank tablets. (These products can alter the pH of water in your toilet tank and damage plastic and rubber toilet parts, causing severe leaks.)
- Don't use your toilet as a trash can. Dispose of only human waste in the toilet.

6. Stop those leaks!

Check both indoor and outdoor systems for leaks. Many undetected leaks allow water (and your money) to go down the drain. Studies have shown that more than 10% of the water a home uses can be wasted due to leaks, which costs both homeowners and the environment. Even "minor" leaks are important to catch: a leak as small as 10 drops per minute equates to 43 gallons of water wasted in a month.

Reading the meter yourself is one way to check for leaks. Be sure to wait for any tank style water heater to refill, turn off the ice-cube maker, and wait for regeneration of any water softeners to occur before taking the initial water meter reading and checking for

[4] Natural Resources Defense Council. (2007). Green Living Guide (Conserve Water). Retrieved June 22, 2011, from http://www.nrdc.org/cities/living/gover.asp#water

[5] California Urban Water Conservation Council.(n.d.). Retrieved April 20, 2011 from http://tinyurl.com/64sy4ly

leaks. Turn off all the taps in your house and then look at your meter. If the meter is still turning, chances are you have a leak somewhere and you will need to investigate further to find the source. For help on reading your meter, visit http://h2ouse.org/resources/meter/index.cfm or contact your local utility. Important note: Some water utilities encourage customers to read their own meter while others prohibit customers from opening the meter box and tampering with the meter in any way. It is a good idea to check with your utility before examining your water meter.

Indoors: Recent research on water use in homes identified leakage as being responsible for a large amount of water loss. Faulty toilet flush valves were the leading causes of leaks – a leaky toilet can waste up to 200 gallons of water per day[6].

Rubber, poly pipe, and often times copper hoses have a finite life and will spring leaks over time. Replace hoses from service lines to appliances/fixtures with hoses that are armored, Pex (cross-linked polyethylene) or metal (but not copper). Read your service manual for specifics on maintaining your appliances and fixtures.

Outdoors: Inspect your sprinklers and drip sprayers for leaks. Puddles and broken sprinkler heads are clues to leaks. If you have an older irrigation system, chances are that you are experiencing leakage, perhaps severe.

7. Save water while laundering.

Your washing machine is the second largest water user in your home. You can save both water and energy when you make your next washer purchase by selecting an ENERGY STAR® rated washer. These washers use about a third less energy and half the water of non-ENERGY STAR® machines. Search for an ENERGY STAR® qualified clothes washer at http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CW.

If you have a newer model washing machine or cannot replace your older model, you can still save water by following the tips below[7]:

- Check hoses regularly for cracks that could result in leaks.
- Pre-treat stains to avoid rewashing.
- Operate the washer with full loads only – even if the machine has an adjustable load setting. If your washer has a variable water volume setting, select the minimum amount of water required per load.
- Use the shortest wash cycle for lightly soiled loads.

8. Install faucet aerators and low-flow showerheads.

After checking for and repairing leaks, the most effective and inexpensive way to reduce your faucets' water use is by installing faucet aerators. Aerators are circular screened disks that screw on to the faucet. The flow number is stamped on the rim of the aerator. For bathroom faucets, low-flow aerators typically allow flows of 1.0 gallon per minute (gpm). For kitchen sinks, they can reduce flow to 1.5 gpm, compared to the Florida Building Code maximum flow rate of 2.2 gpm for new kitchen faucets[8]. Some aerators can restrict flow to less than 1.0 gpm, however restricting faucet flows below 2.2 gpm may cause an increase in the "wait" time for hot water to travel from the water heater to the fixture.

To maximize the efficiency of your water use when bathing, take short showers, use low-flow showerheads and reserve baths for special occasions. (A full bath tub holds 36 gallons and a full "garden tub" holds more than 65 gallons.) All new showerheads manufactured in the U.S. must restrict flow to 2.5 gallons per minute (gpm) or less. A water-saving technology that offers an alternative to aerators is a laminar flow control. These devices deliver a constant rate of flow regardless of line pressure by dividing the water flow into a series of parallel streams. For more information about laminar flow fixtures, consult http://www.toolbase.org/Technology-Inventory/Plumbing/laminar-flow-fixtures. In addition, here are some tips for maximizing shower efficiency:

- Take shorter showers. A typical shower lasts about 8 minutes and uses 17 gallons, whereas an efficient shower lasts 3 or 4 minutes and uses 7.5 gallons. A recent study showed that water use in showers has

---

[6] All the flap on the flapper. (n.d.). Retrieved March 15, 2011, from http://www.toiletflapper.org/index.aspx
[7] Vickers, A. (2001). *Handbook of Water Use and Conservation*. Amherst, MA: Water Flow Press.
[8] International Code Council. (2007). *Florida Building Code 2007: Plumbing (First Printing), Includes 2009 Supplement.* Table 604.4. Accessible on-line from http://www2.iccsafe.org/states/florida_codes/

increased from 30 to 34 gallons per household per day[9]. Buy a shower timer if you have trouble keeping showers short and need a visual cue to conserve.

- Look for the WaterSense label on new fixtures/accessories: http://www.epa.gov/WaterSense/about_us/watersense_label.html

9. Wash dishes efficiently.

If you wash dishes by hand, don't keep the water running while you're working, and don't fill the sink with more water than necessary to do the job. Also, be sure you've installed a low-flow aerator on your kitchen faucet. If you use a dishwasher, run it only when it's full. Newer models of dishwashers run with a full load can use less water than washing the same number of dishes by hand. In addition, many newer dishwashers require little or no advance rinsing of dishes. Read the instruction manual for your machine to determine other ways to minimize rinse water usage. Check hoses regularly for cracks that could result in leaks. Finally, limit use of your in-sink waste disposal, and if you do use it, try not to run a lot of water in the process, as many homeowners waste water when operating the device. Composting is a good alternative for disposal of many food scraps.

If purchasing a new dishwasher, search for an ENERGY STAR® qualified dishwasher at http://www.energystar.gov/index.cfm?fuseaction=dishwash.search_dishwashers.

10. Use green lodging.

To cut down on water used for laundering when traveling, choose a green hotel or green lodging option that allows you to reuse sheets and towels when you stay longer than one night. Most "green" lodging facilities also have low-flow showerheads and faucet aerators to conserve water. The Florida Department of Environmental Protection designates hotels in Florida that meet their *Green Lodging* criteria at http://www.dep.state.fl.us/greenlodging/lodges.htm.

10 Ways to Protect Florida's Water Quality

Floridians can play a big part in improving water quality. The actions you take in your home, yards and landscapes can help keep pollutants out of water (the "universal solvent") and slow the flow of stormwater across and away from your property. Some pollutants are impossible to clean out of waters that may eventually reach our drinking water, and cleanup of others is costly, so prevention is the best strategy. Here are ten more steps to being a water-wise Floridian that are focused specifically on protecting water quality.

1. Use fertilizer sparingly.

Do your part to prevent the introduction of nutrients that can damage Florida's water bodies by exercising great caution when using fertilizers for lawns, landscapes and gardens. Over-fertilizing or improperly applying fertilizer can cause excess nutrients to wash off or leach through the soil. It can also aggravate pest problems, stimulate excessive plant growth (meaning you'll have to spend more time and fuel mowing), and increase irrigation needs. You can minimize the need for lawn fertilizer by allowing clippings to stay in place using the "cut it high and let it dry" mowing technique. If you decide to use commercial fertilizer, be sure to fertilize only as needed for specific grasses/plants, and never apply fertilizer during the dormant season or when rain is in the forecast. Choose a "slow-release" or water-insoluble nitrogen product and always sweep granular fertilizer spilled on the driveway or sidewalk back onto the grass. Established trees and shrubs don't necessarily need fertilizer so changing your landscape plant palette to include more trees and shrubs can help you reduce fertilizer use[10].

For more information about using fertilizer appropriately, consult the *Florida Yards and Neighborhoods Handbook* at http://fyn.ifas.ufl.edu/materials/FYN_Handbook_vSept09.pdf.

---

[9] Study funded by a consortium of nine water utilities and by a grant from the US EPA. (January 19, 2011). Analysis of water use in new single family homes. Electronic version to be available on-line at http://www.aquacraft.com

[10] Knox, G., Broschat, T., Kidder, J. Gilman, E., Trenholm, L., Black, R., et al. (2002). Fertilizer recommendations for landscape plants. (EDIS Fact Sheet ENH 858). Gainesville, FL: University of Florida, Cooperative Extension Service, Institute of Food and Agricultural Sciences. Retrieved March 23, 2011, from http://edis.ifas.ufl.edu/ep114

From a sustainability standpoint, compost is a superior form of fertilizer for gardens, trees, and ornamental plants. Not only does compost release nutrients slowly and add organic matter to keep soil healthy, but it is also created out of "waste" from your yard and kitchen, so it reduces the amount of solid waste going to landfills and the amount of water used to operate in-sink waste disposals. To add natural organics and improve soil quality in beds, consider using materials readily available from your yard, like tree leaves and pine needles, mulch from pruned plants, or grass clippings.

To learn more about making and using compost, contact your county Extension agent or see the composting guide at http://livinggreen.ifas.ufl.edu/waste/composting.html on the IFAS Living Green website.

2. Capture stormwater before it runs off your landscape.

Take steps to reduce stormwater flows and to prevent runoff from washing onto driveways and into streets. Make sure any gutter downspouts drain onto pervious areas in your yard instead of onto your driveway. As mentioned in the tips for water quantity, you can use a rainwater harvesting system (rain barrel or cistern) to reduce the amount of stormwater runoff flowing off of your property.

Another idea to reduce stormwater runoff is to install a rain garden on your property. A rain garden is an area that is specially designed to store and infiltrate rainwater after a storm. Once rain gardens are established, they can be kept up with little effort and can add beauty and variety to your landscape. A well designed rain garden can capture virtually all the stormwater runoff from a property during typical storm events. A rain garden can be easily installed where a natural depression exists in your landscape by digging out a shallow area and filling it with gravel, topsoil, plants and mulch. Use plants that can tolerate both drought and wet conditions and that have a good root system to help infiltrate water. Rain gardens can also be used with swales and berms to convey, capture and infiltrate water (check with your city and county code enforcement departments to make sure your design is in compliance).

Your rain garden can be designed to collect runoff from your roof and water from the lawn or driveway. The size, shape and location depend on the amount of rainwater captured by your roof, driveway, and other impervious surfaces, as well as on the slope of your yard. To get help on rain gardens in your area and what to plant in them, contact your county Extension office. For sizing and other design details, see the Florida Department of Environmental Protection rain garden site at http://tinyurl.com/6jrbnae or the Hillsborough County Extension publication *Rain Gardens, A Manual for Central Florida Residents* at http://tinyurl.com/3er9edu.

3. Don't sweep or blow grass clippings or debris into roads, storm drains, or swales.

Only water should flow into a storm drain. Roads, swales, and other water conveyance features need to be clear of debris for proper water drainage to occur.

4. Protect shorelines with vegetative buffers.

If your yard borders a lake, stream, river, canal or stormwater pond, keep a buffer of low-maintenance plants at the water's edge to which you do not apply fertilizers or pesticides and which you do not mow. This area can prevent clippings, sediment and lawn chemicals from reaching the water body.

5. Limit use of hazardous substances, including toxic pesticides and household cleaners.

Reduce your dependence on these potentially hazardous substances by choosing environmentally friendly and least-toxic alternatives. Always read and follow the use and disposal instructions for all chemical products. Buy only what you need, and use what you buy. If you have leftovers that you will not use, give them to someone who can use them or take them to your community's hazardous waste collection site. If you don't know where that site is located, you can search at http://earth911.com/.

In the garden, consider using alternative pest management solutions (see http://ipm.ifas.ufl.edu/community/home_gardening/) and **never** use chemicals like bleach, gasoline, or kerosene for weed or insect control.

For tips on environmentally friendly alternatives to potentially hazardous household products, see the IFAS publication "Hazardous Household Substances: Alternatives that are Relatively Free of Toxic Effects" at http://edis.ifas.ufl.edu/he791.

6. Don't flush medicines down the toilet.

Pharmaceuticals and other personal care products can cause harm to the environment as well as disrupt reproductive processes in aquatic organisms[11]. Traces of pharmaceuticals from ibuprofen to antibiotics to hormones have been found in streams, rivers and lakes. See http://www.epa.gov/ppcp/faq.html for more information on what are generally referred to as Pharmaceuticals and Personal Care Products as Pollutants or PPCPs. While some of these substances may be introduced to wastewater inadvertently (after passing through our bodies for instance), they should never be deliberately introduced. Many chemicals cannot be removed during normal wastewater treatment processes, and after discharge to surface and groundwater can ultimately show up in drinking water. Remember that water is called the "universal solvent" for a reason, and keep it clean. Contact your pharmacy or your county's waste management and/or hazardous waste management department for recommendations on proper disposal of these products in your area. See http://www.dep.state.fl.us/waste/quick_topics/publications/shw/meds/dontflushfinal.pdf for more information specifically addressing disposal of unwanted medications.

7. Clean up pet wastes.

The EPA reports that two to three days' worth of pet waste from 100 dogs in a 20-square mile watershed can contribute enough bacteria to temporarily close a bay to swimming and shell fishing[12]. Pet waste that is not picked up also contributes nutrients (nitrogen and phosphorus) to stormwater runoff, contributing to water quality problems downstream. Always remember to scoop your pet's waste, bag it and dispose of it in the trash. Many local rules allow for and recommend disposal of pet waste with your household trash. Call your waste management department for specific recommendations on proper pet waste disposal in your area.

8. Shun antibacterial soaps and products.

Studies indicate that households that use these products are no healthier than those that use soap and water and other basic cleansing products[13]. The American Medical Association recommends against using "antibacterial" products in the home as they may promote bacterial resistance to antibiotics, making it harder to kill germs in the future. These products also contain triclosan and triclocarban, ingredients that can disrupt hormones and do not break down in wastewater. If you need to use an antimicrobial skin disinfectant, use an alcohol hand rub or rinse product that does not list triclosan or "fragrance" in the ingredients[14].

9. Wash your vehicle at a commercial car wash.

Many commercial car washes recycle their water, so this is a more water-wise option than washing your car at home. If you must wash your vehicle at home, wash it in your yard rather than over the driveway or any other impervious area. This will reduce the amount of soap and chemicals that run off into the storm drain.

10. If you have a septic tank, maintain it.

Prevent leaching from your septic tank by pumping it out regularly (every three years) instead of waiting until the system stops working and your toilets are backed up. Avoid overwhelming the system by using water efficiently and spacing out laundry loads. Protect the drainfield by avoiding driving or parking over it and by planting only grass or other shallow-rooted plants over the tank and drainfield. Finally, consider replacing an old system with a new, performance-based, nitrogen-reducing unit.

---

[11] United States Environmental Protection Agency (US EPA). (n.d.). Aquatic life: contaminants of emerging concern. Retrieved June 10, 2011, from http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/cec.cfm

[12] United States Environmental Protection Agency (US EPA). (1993). *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. Washington, DC: US EPA, Office of Water.

[13] Aiello, A.E., Larson, E., and Levy, S.B. (2007). Consumer antibacterial soaps: effective or just risky? *Chemical Infectious Diseases, 45* (Suppl. 2), S137–S147.

[14] Environmental Working Group. (n.d.). Water pollution caused by cosmetic chemicals, cleaning supplies and plastics: what you can do. Retrieved June 10, 2011, from http://www.ewg.org/phthalates/HowtoreduceyourexposuretoPhthalates

Other References and Resources

You can find out more about your region's water, including proposed plans for future water supply and water quality protection, by visiting the website of your water management district:

- Northwest Florida Water Management District (http://nwfwmd.state.fl.us)
- St. Johns River Water Management District (http://floridaswater.com)
- Southwest Florida Water Management District (http://www.watermatters.org)
- South Florida Water Management District (http://www.savewaterfl.com)
- Suwannee River Water Management District (http://www.srwmd.state.fl.us)

This Florida DEP website has information and videos about Florida's water quality and quantity: http://www.protectingourwater.org/florida_water_story/channel/.

To find out about your watershed, visit the EPA's "Surf Your Watershed" web pages at: http://cfpub.epa.gov/surf/locate/index.cfm.

To learn more about emerging contaminants in the environment, visit the US Geological Survey's website at: http://toxics.usgs.gov/regional/emc/index.html.

To find out more about septic systems, see the Florida Department of Health, Division of Environmental Health, Bureau of Onsite Sewage website at http://www.myfloridaeh.com/ostds/index.html and the "Septic Systems Brochure" at http://www.myfloridaeh.com/ostds/brochure/index.html.

Visit Extension Service site for information about water conservation, water quality and more at: http://solutionsforyourlife.ufl.edu/environment/water_resources.html.

Acknowledgements

Authors: Kathryn Ziewitz[a], Barbra Larson[b], Jennison Kipp[b], and Wes MacLeod[c]

Editor: Kathleen C. Ruppert[b]

Reviewers: Wendy Graham[d], Deirdre Irwin[e], and Leesa Souto[f]

[a] *Formerly with the Department of Family, Youth and Community Sciences, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL*
[b] *Program for Resource Efficient Communities, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida*
[c] *Department of Family, Youth and Community Sciences and UF Landscape Architecture graduate student, University of Florida, Gainesville, FL*
[d] *Water Institute, University of Florida, Gainesville, FL*
[e] *St. Johns River Water Management District, Palatka, FL*
[f] *University of Central Florida Stormwater Management Academy, Orlando, FL*

First published June 2011.

This is a fact sheet in *The Carbon Challenge Series* for the Florida Energy Systems Consortium (FESC). The goal of the consortium is to become a world leader in energy research, education, technology, and energy systems analysis. For more information, go to http://www.FloridaEnergy.ufl.edu