

# TAPP

## Guide to a Water-Friendly Yard & Lawn

THINK ABOUT PERSONAL POLLUTION



# TAPP Guide to a Water-Friendly Yard & Lawn

A Project of the City of Tallahassee Stormwater Management Division  
and Department of Environmental Policy and Energy Research.  
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## The TAPP Campaign

### THINK ABOUT PERSONAL POLLUTION

The **TAPP Campaign** presents this *Guide* to show how an individual can minimize pointless personal pollution of water. By making a few gardening choices that will protect the quality of precious water resources, each of us can beautify the yard and make yard work easier. Seminars explaining these concepts are available to interested neighborhoods and community organizations. Call 891-6860 for information.

The Tallahassee Red Hills and Woodville Karst Plain of the Big Bend region contain a unique, complex system of rivers, lakes and springs. Sinkholes channel water underground to recharge the Floridan aquifer, which supplies drinking water to area residents. That is how stormwater becomes part of our drinking water source.

Water flowing over yards, driveways and streets during and immediately following rainstorms carries silt, car fluids, pesticides, nutrient-rich (nitrogen and phosphorus) fertilizers, leaves and litter into storm drains and waterways. This is called stormwater runoff. Eroded soil muddies the water by adding excess sediment to lakes and streams. Pulses of excess nitrogen and phosphorus stimulate algae and plant growth beyond natural levels, and soils cloud the water, disrupting the balance of aquatic life.

A water-friendly yard reduces the volume of stormwater runoff and is designed to filter pollutants, keeping them on the yard instead of reaching streams, lakes and sinkholes.

Each of us can have a major effect on local water quality. This TAPP ***Guide to a Water-Friendly Yard & Lawn*** helps educate individuals on the ways that small, personal actions can affect waterbodies.

This *Guide* illustrates a few simple approaches that can keep water systems healthy.

- ◆ **Slow the flow of water from your yard.**
- ◆ **Protect the shoreline.**
- ◆ **Keep your yard at home: manage soil to prevent erosion.**
- ◆ **Use fertilizers and pesticides carefully in your yard, not in your lake.**
- ◆ **Proper lawncare creates a water-friendly yard.**
- ◆ **Water efficiently and at the right times.**

It is essential that all of us take a part in protecting our water systems. The goal of the TAPP Campaign is to slow the flow of runoff in order to filter and clean the water, one yard and one landscape at a time. Every drop of water that we lose, nature finds.



*Every Drop You Lose, Nature Finds*



## **Stormwater Runoff:** **“Slow the Flow” to Clean the Water**

The overall goal of a water-friendly yard is to slow the flow of runoff, helping to assure that the water reaching streams and lakes is clean. Slowing the flow helps prevent pollutants such as silt, fertilizers and pesticides from washing off your yard into storm drains and eventually into local water resources. Keep in mind that many storm drains lead directly to waterways, without any treatment. So take steps to hold rainwater in areas of your yard where it can filter slowly through the soil. This can be done by adopting some of the following practices.

### **Examine the Lay of Your Land**

Where does the water flow? Collect? Run off? Surfaces that don't absorb rain, like the roof, driveway or even the lawn, will have water flowing from them. These are targets for “slow-the-flow” techniques.

### **Minimize Erosion**

Minimize soil erosion by planting ground covers and by creating mulched beds on bare areas or places where grass is hard to grow. No yard should have bare ground, which is the most vulnerable to erosion. Silt (fine soil) is a major pollutant in water systems, so keep your yard at home. For problem areas, biodegradable straw or jute matting can be laid on bare areas to stabilize the soil. Plants will grow right through and over time the matting will disintegrate.

### **Create Mulched Beds**

On one hand we have impervious surfaces like roads and driveways. Then there is your lawn—somewhat impervious and somewhat porous. None of these surfaces are good at slowing

the flow and absorbing excess water. What to do? One solution is to create more mulched beds. Well-mulched beds can reduce the need for fertilizing, watering, mowing and pesticide use, making your yard easier to manage and keeping it from eroding. You can create a place of beauty in your yard that takes far less time and money to maintain than grass, and helps protect water resources.

### **Plant a Rain Garden**

A beautiful solution to pollution, rain gardens are low spots landscaped with flowers and other moisture-tolerant plants to replace areas of lawn or bare ground. Rainwater collected from your roof, driveway or lawn is conveyed to this low spot where it naturally drains. The rain garden fills with a few inches of water and allows it to filter slowly into the ground. Rain gardens absorb about 30 percent more water than conventional lawn. Look for TAPP's **Rain Gardens: A How-to Manual for Homeowners** at area nurseries and libraries. Call 850-891-6860 or visit [www.TAPPwater.org](http://www.TAPPwater.org).



### **Build Berms and Swales**

Berms are raised earthen areas covered with vegetation that can be located to direct water flow. Berms offer an attractive means for directing the water from around the house to areas that can use it. Swales are shallow, landscaped conveyances that allow water to be filtered and to percolate into the ground.

### **Terrace a Slope**

If you have a sloped area that is too steep for a berm or a rain garden, consider terracing. An ancient technique for controlling water flow, this method of cultivation is used around the world to convert steep slopes into productive farmland. You simply convert the slope into a series of two or more stepped terraces.

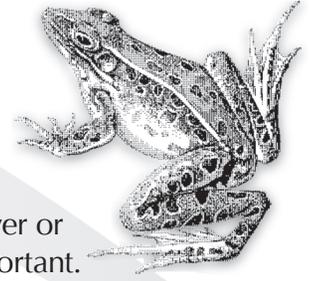
## Save Your Rainwater with Rain Barrels



Rain barrels are a great way to capture nature's bounty, keep some stormwater runoff away from driveways and streets, and provide a good source for watering your plants and lawn. Collecting rainwater offers the opportunity to use "soft" water with no chlorine, calcium carbonate, salts or other minerals that may be found in water that has filtered through the ground. And it's FREE. Lawn and garden water use typically makes up about 40 percent of your total water bill in dry spring and summer months.

Remember, your rain barrel will not be able to hold all the water draining from your roof, especially in a heavy downpour. According to TAPP Master Gardener Ed Schroeder, 1/8 inch of rain on a 1,000 square foot roof can fill one 60 gallon rain barrel, so you will need eight rain barrels to capture all the rain from a one-inch downpour. Rain barrels can be set

up in tandem, but the plumbing between them should be large enough in diameter to accommodate most, if not all, of the rain coming through the downspout in a downpour. Some rain barrel systems can be equipped with diverters to send excess water to perforated hoses in beds, or channel it to other locations for irrigation. Overflow could also go to a dry pond or rain garden. There are endless possibilities for you to explore. A great resource for information about rain barrels is the TAPP publication ***Rain Barrels: A Homeowner's Guide***: download it free at [www.TAPPwater.org](http://www.TAPPwater.org).



## Protect Your Shoreline

If you live on the shore of a lake, pond, river or stream, your stewardship is especially important. Establish a buffer zone of plants along the water's edge and a "no-mow" zone along the bank.

Vegetation will help filter sedimentation from stormwater and, to a lesser degree, pollutants before they reach the water. The important thing is to avoid maintaining a manicured lawn all the way down to the edge of the shoreline. A closely mowed lawn really provides little filtering action, and lawn fertilizers, weed killers and other pesticides can easily be washed into our waterways. A berm/swale system along the shore can be used to slow stormwater runoff and give it more time to soak into the soil. A buffer of taller plants and grasses, particularly native vegetation, will filter stormwater from your yard without blocking your view.

For problem areas, biodegradable straw or jute matting is available for erosion control. The matting can be laid along the bank to stabilize the area. Plants will grow right through, and over time the matting will disappear. Ask your local nursery for a source.

For more information on protecting your shoreline, pick up a free copy of ***Waterfront Property Owners Guide*** (see *Additional Resources*, page 20).



## Keep Your Yard at Home:

### The Importance of Percolation & Healthy Soil

Healthy yards and gardens begin with healthy soils. Soil has its own ecosystem and it should be teeming with life. Most plants love loose, porous soils that are more open to air, where roots breathe more easily. Lack of oxygen is the biggest factor that limits root growth and helpful critters such as earthworms. Soil compacted during construction or by heavy foot or vehicle traffic loses its porosity. Loose, porous soil slows the flow by absorbing and holding more water and helping water reach plant roots.

### Test Your Soil's Porosity

This simple percolation test can test your soil's porosity. Remove both ends from a 46 ounce can (like a large juice can) and mark a line two inches from one end. Pound the can into the soil so that the line is level with the surface. Pour one quart of water into the can and time how long it takes to drain into the soil.

| DRAINAGE TIME       | SOIL POROSITY                                                |
|---------------------|--------------------------------------------------------------|
| Less than 2 minutes | Excellent percolation & air circulation                      |
| 2 to 8 minutes      | Somewhat compact or dense soil                               |
| More than 8 minutes | Overly compact or dense soil with little absorption of water |

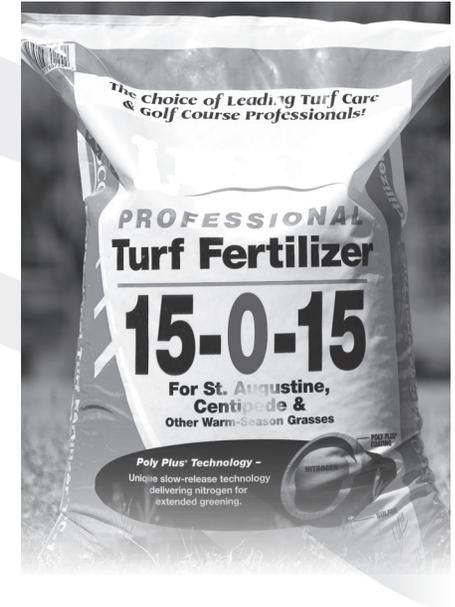
Many plants and grasses won't grow well or at all in compacted soil. What can you do to improve compacted soil? It's easy: keep people, cars and bikes on designated paths or walkways. Use slow-the-flow methods to minimize loss of good, porous top soil. For lawns, leave grass clippings; for garden beds, add leaves and mulch. Over time this process will build organic matter, allow better root growth, attract beneficial critters and improve the porosity of the soil.

## Fertilizing Your Lawn: Less Is Best

What is good for our yards may be bad for our lakes. Lawn fertilizer can become pollution that disturbs the natural balance in a lake or stream. Fertilizing the lake leads to an ugly explosion of plant and algae growth (blooms), often followed by a massive die-off with the dead vegetation decomposing in the water. This high rate of decomposition uses up the oxygen supply in the water, depriving fish of the oxygen they need to breathe and causing fish kills. Certain algal blooms can even be directly harmful for swimming. So, fertilizers in our lakes and streams create a big, messy problem. By taking a few smart steps in yard fertilizing practices, this pointless personal pollution can be prevented.

### Read the Label

Start by reading the label. All bags of fertilizer, as required by law, list three numbers on the label (e.g., **15-0-15**). The first number is the percentage of **nitrogen**, the second is the percentage of **phosphorus**, and the third is the percentage of **potassium**. The number you want to pay the most attention to when it comes to fertilizing your lawn is the middle number—phosphorus.



## Phosphorus—You Don't Need It!

Choose lawn fertilizer that is very low in phosphorus. Zero is even better. Phosphorus is causing serious problems—it is extremely difficult and expensive to remove once it gets into the water. Most north Florida soils are already high in phosphorus, so paying for it in lawn fertilizer is unnecessary. Even if a soil test suggests the use of phosphorus, it is still not needed on your grass because phosphorus only benefits flowering plants and, in our area, is a waste of money on a healthy lawn.

It is actually okay not to fertilize at all and it certainly isn't necessary to fertilize routinely. Most lawns can draw the nutrients they need from the clippings that fall back into the grass after mowing. Bagging these resources and throwing them away is unnecessary work that will be detrimental to your lawn in the long run. Fertilize only in response to a determined need and remember, "less is best."

### Important Points on Fertilizing Grass

- ◆ If you decide you need to fertilize occasionally, make sure that at least half of the nitrogen in your fertilizer is slow-release or water insoluble nitrogen. Slow-release fertilizers are less likely to leach out or wash away in runoff. Apply no more than one pound per 1,000 square feet of lawn.

**NOTE:** It takes about 6.67 pounds of "15-0-15" fertilizer to supply one pound of nitrogen for that size area. If you're not using a slow-release fertilizer, never exceed a rate of one-half pound of nitrogen per 1,000 square feet of lawn (about 3.33 pounds of fertilizer). For other fertilizer calculations, check with your County Extension Service (see *Additional Resources*, page 20).

- ◆ What type of grass do you have? Centipede grass needs very little nitrogen. In fact, its most common problem, over-fertilization, leads to a disease called Centipede decline.

Look for the ZERO. Just as green and keeps our water clean.

Every drop you lose, Nature Finds. | [www.TAPPwater.org](http://www.TAPPwater.org)

- ◆ Fertilize no more than once or possibly twice a year (April and August).
- ◆ When applying fertilizer use a low spreader setting so that you can make at least two passes (in a crisscross pattern) before you run out. Remember, impervious surfaces like sidewalks, streets, or driveways don't need fertilizing and anything that lands there will be washed off to our lakes and streams with the next rain.
- ◆ If your lawn borders a lake, pond, stream or river, keep the fertilizer far away from the water, unless you want to watch your clear water turn a slimy green.
- ◆ Avoid counting on rain to "water-in" fertilizer, because rain is hard to predict. It's important to "water-in" the fertilizer yourself with about 1/4- to 1/2-inch of water. If you depend on a rain-storm to do the watering, you may get a nasty surprise—a gully washer that washes all of the fertilizer, and your hard work and money, down the nearest storm drain.
- ◆ Never fertilize before a storm. Delay application if rain is expected.

Mature shrubs and trees usually don't need to be fertilized, particularly if they are well mulched. Fertilize younger shrubs and trees only as needed to make them grow faster, no more than three applications per growing season.



## **Use Pesticides Carefully**

If you over-water and over-fertilize your grass, you create a juicy, luscious lawn that says to all bugs, “DINNER OVER HERE!” Then there’s trouble—you get out the pesticide, then the fertilizer, then the pesticide ...it can end up taking a lot of your time and money. An over-watered, over-fertilized lawn is weak and vulnerable to pests.

It is important to remember that pesticides are poisons and must be used carefully. The first thing to do if you think you have a pest problem is to identify the enemy before you attack. Be careful with your identification, some bugs actually help by eating bugs that are harmful to your yard. Killing these good guys only makes the problem worse—they may have moved in just to feast on the bad guys and may solve your problem for you if you let them.

Once you’ve determined that you do indeed have a bad bug problem on grass or plants, use the least-toxic pesticide available to treat it. Some less toxic pesticides include insecticidal soap, horticultural oil, Bt, and Neem oil. Treat only the affected areas—treating unaffected areas is a waste of money and time and puts more poison in the environment. It can also lead to pesticide resistance in the pest population. And, of course, delay spraying pesticide if windy or rainy weather is expected. You want your investment to stay in your yard.

### **Choose Native Plants**

Native plants are generally better than exotic plants at coping with native pests. If you choose native plants, you’ll need less pesticide. As a rule, exotic plants require more pesticides, fertilizers, watering and more attention in general.



## **Create Mulched Beds**

To change a grassy (or bare) area into a bed, you only need two things—mulch and plants. Mulch is organic material applied to the surface to protect or improve an area. Organic mulch (leaves, wood chips, grass clippings and pine straw) keeps your soil moist, stabilizes temperatures, suppresses weed growth, and reduces erosion and soil compaction. While providing a better place for your plants, you also slow the flow and help reduce stormwater runoff.

As the mulch breaks down, it enriches the soil by releasing nutrients that plants can use. This enriched soil is fluffier and more porous, and, like a sponge, it soaks up excess water easily. Mulch requires practically no maintenance—just add new mulch as needed and perhaps weed once in a while.

### **Tips for forming attractive, effective mulch beds**

- 1.** Pile a 2-4 inch layer of organic mulch in a designated area. Plant your plants and, presto, you have a bed. If this seems too easy, you can haul in some mushroom compost or even better, use your own homemade compost from material that originates in your own yard. Leaves, wood chips, pine needles, grass clippings, chopped leaves from the mower bag, etc., offer a source of mulch that is an often unappreciated asset.
- 2.** When you rake the leaves off the lawn, throw them into your beds. If you don’t have enough leaves to cover the area with a 2-4 inch layer, look for bags of leaves along the roadside. Many people are nice enough to bag them and leave them by the curb for you. If you still don’t have enough, buy some pine bark mulch or pine straw. See below for sources of free mulch.

3. If your yard generates more than you need, consider allowing the excess material to compost for later use in a corner of the yard, or you can share some with neighbors and friends.
4. One large mulch bed is better than several small ones. For beds that include trees, extension agents currently recommend mulching 2 feet in diameter for every inch of trunk diameter. A tree with a 5-inch diameter trunk should have a 10-foot diameter mulch bed. Instead of mulching around individual trees near one another, have one large mulch bed that protects them all. That goes for flower beds and shrubs, too. Group new plantings, shrubs and flowers into large beds. Your landscape will look better, and you'll do less raking and mowing. Try experimenting with various outlines for your mulched areas.
5. Under trees too shady for a lawn to grow well, allow leaves to collect and create their own mulch. Such a self-mulching area is easy to maintain. A self-mulching tree canopy covering half your yard can reduce runoff by 25 percent. Be sure not to pile mulch against the tree trunk—leave space for air to circulate.

**The main thing to remember** is mulching is NOT optional—you must apply mulch to make a good, healthy bed. Mulching keeps your yard at home, absorbs water, and prevents your soil from washing away down the nearest storm drain.

### Sources of mulch

» **FREE mulch is available from the Leon County landfill on US Hwy. 27 (4-1/2 miles east of Capital Circle). Call 606-1800 for more information.**

» **Wakulla residents can contact their County Extension Service office at 850-926-3931 for information about suppliers of free mulch.**

» **Arborists and tree services may also be willing to provide free mulch, particularly if you have a working relationship with them.**

**NOTE:** The Florida Native Plant Society advises against using cypress mulch.

Many valuable cypress trees are destroyed for the sole purpose of creating mulch products, and debate exists about the effectiveness of cypress as mulch. On the other hand, pine bark mulch is a by-product of pulp production.

**WARNING:** Be careful with disposal of exotic invasive plants. According to the FL-DEP's Bureau of Invasive Plant Management, berries and seeds from such plants should be bagged as trash for the landfill, not used as mulch.

**CAUTION:** Never sweep or blow debris into a storm drain or swale. These areas need to stay clear for water storage or drainage.

## Mowing Practices for a Healthy Lawn

Unless you love to mow, consider reducing the size of your grassy area by creating well-mulched garden beds as discussed above. The loose, porous soil in a mulched bed absorbs much more water than a lawn, so the smaller you make your lawn, the more water-friendly it is.



**If you like a grassy lawn, these techniques will help it stay healthy:**

- ◆ Mow often enough to maintain the right grass blade height, ideally removing no more than a third of the grass blade in a cutting.
- ◆ Mow grass when it's dry—mowing wet grass encourages the spread of disease.
- ◆ Your mower height is very important. Make sure it is correct for your type of grass and current conditions. Not sure? Err on the side of too high rather than too low. If you cut grass longer, the root system will be stronger. If you cut grass too short, it will be susceptible to stress and damage, or could actually die. Cutting grass too short can create gashes in your yard, promote disease and even damage your mower. If you hire a lawn service, insist that they use the correct mowing height for your type of grass.
- ◆ Frequent mowing helps to control and kill many weeds by preventing reproduction (no seeds) as long as the blade isn't set too low.

- ◆ Be sure your mower blades are sharp. Sharpen the blades monthly if possible or whenever you notice tearing of the blades of grass. Sharp mower blades prevent ripped grass blades that stress the grass and open it up to disease.
- ◆ Remember: the worst enemy to our lakes and streams is erosion, so avoid bare ground.

### **Recommended Mowing Heights**

The mowing heights recommended for the most common lawn grasses used in north Florida are as follows:

- Centipede or Bermuda:** 1-1/2 inches (2 inches in shaded or stressed areas)
- St. Augustine or Bahia:** 3 inches (up to 4 inches in shaded or stressed areas)

Leave grass clippings on the lawn to decompose and recycle their nutrients. This self-mulching can satisfy most of your yard's nutritional needs. That way you'll save money on fertilizers.

The growth rate of grass changes throughout the year and according to the weather. Your grass needs more frequent mowing during warm, rainy periods and less frequent mowing during hot, dry weather. Let your eyes, and not your calendar, tell you when to mow. If your lawn service does not offer this flexibility, ask them to adjust to the recommended height for your grass type. Higher mowing heights also enable grass to better withstand drought.



## **Water Efficiently**

### **Know When to Water...**

The best time to water is between 4 and 7 o'clock in the morning. This is when temperature and wind speed are at their lowest rates, and there is much less evaporation. Wind and temperature are highest and evaporation is most likely from 10 AM to 4 PM, so avoid watering during this time period. When you do bring out the sprinkler, remember to move it around so that the yard gets watered evenly.

### **...and Avoid Over-Watering!**

This is a common mistake. The big problem with over-watering is erosion. Lawns tend to act like impervious surfaces (pavement). As we walk or drive on lawns, they become compacted and absorb less water. Also, water tends to fill those important spaces in loose soil that help the roots breathe. Too much water can encourage growth of fungus and make plants more susceptible to diseases and pests. Over-watering also increases erosion and runoff. When the soil is saturated with water, it is less able to hold water when it rains.

Avoid setting up a routine schedule for watering your lawn—it creates extra work for you and extra stress on your yard. There is no need to run your sprinklers if it just rained.

If rain is forecast in the next few days, hold off on watering because your yard will be able to hold more water if it is thirsty than if it has just been watered. This is a rare instance in life

where procrastinating can be the best thing to do, so enjoy it.

Newly planted trees, shrubs and flowers need to be watered more often, but established plants and shrubs seldom need watering. Remember, mulched beds have more loose, porous soils and can hold more water than grassy lawns and need to be watered less frequently.



## ***Not My Pet!***

Do you think: "My pet can't be part of a water pollution problem! My pet is a member of the family. He watches TV with me on the sofa. He sleeps in my lap..."

Water pollution from pet waste occurs when we concentrate ourselves—and our pets—into cities. There is no sewage treatment for pet waste.

The U.S. Environmental Protection Agency (EPA) has been studying the problem of water pollution from pet waste for several years. The EPA reports that two to three days' worth of pet waste from just 100 dogs in a 20-square-mile watershed

can contribute enough bacteria to temporarily close a bay to swimming and shell fishing (U.S. EPA, 1993). Pet waste also contributes to nutrient pollution in our local waterways.

Of course, it's not your pet alone. The pollution results when we add all our pets together. A recent local survey indicates that there are at least 43,000 dogs in Tallahassee, with the potential to generate 16 TONS of waste each day. Dog waste has six times more bacteria (bugs that can make you sick) than human waste. When pet waste is left on the ground, runoff from rain storms washes it into the storm sewers, and on to our lakes—often with no sewage treatment. With pet ownership comes responsibility. Pet waste is a pollution source that we CAN control.

It's an issue of hygiene, goodwill... and good sense! Over half the residents of our community don't have pets and shouldn't have to deal with what ours leave behind. The TAPP Campaign recommends that you control or eliminate pet waste, especially near roadways, sidewalks and waterways.

## **So... what to do with pet waste?**

- Bury it in the yard.
- Put it in the trash receptacle.
- Flush it down the toilet (without the bag).

***Prevent Pointless Personal Pollution...  
Your Actions Do Count!***

## Other Recommendations

In addition to the yard and lawn practices shown in this *Guide*, the TAPP Campaign recommends these important measures:

- ◆ **Don't lose a drop when changing oil or adding fuel to your vehicle or lawn mower.**
- ◆ **Maintain your septic tank.**
- ◆ **Provide plants, ground covers or brush piles for birds, butterflies and other wildlife.**
- ◆ **Eliminate invasive, exotic plants, especially Chinese Tallow and Air Potato (right).**



## Additional Resources

- ◆ **Leon County Extension Service Office: 850-606-5202.**
- ◆ ***Rain Gardens: A How-to Manual for Homeowners*** available from the City of Tallahassee Stormwater Management, 891-6860.
- ◆ ***Best Management Practices for Protection of Water Resources in Florida. Florida Green Industries, June 2002*** (available at your County Extension Service).
- ◆ ***A Guide to Environmentally Friendly Landscaping—Florida Yards & Neighborhoods Handbook. 2nd ed., University of Florida IFAS Extension, 2003*** (available at your County Extension Service).
- ◆ ***Waterfront Property Owners Guide. Florida Dept. of Environmental Protection, December 2001*** (available from FL-DEP Non-point Source Management Section, 850-245-7508).

**NOTE:** The above three publications can be downloaded at [www.dep.state.fl.us/water/nonpoint/index.htm](http://www.dep.state.fl.us/water/nonpoint/index.htm).

- ◆ For more information, feel free to call **850-891-6860** or visit our Web site at **[www.TAPPwater.org](http://www.TAPPwater.org)**.