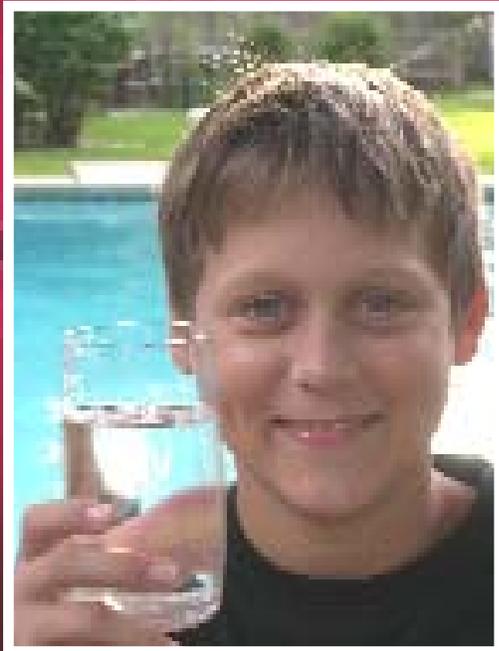


www.nhcrwa.com ~ www.stopthedrop.com
281-440-3924 ~ Fax - 281-440-4104
Houston, Texas 77068
3648 FM 1960 West, Suite 110



STOP THE DROP!
Use water wisely...

Photos on pages 1, 2,3,4,7, 10, 12, 16



LEARNING TO USE
WATER WISELY...

*The water we conserve today
can serve us tomorrow.*

NORTH HARRIS COUNTY REGIONAL WATER AUTHORITY

SOME INTERESTING FACTS ABOUT WATER...

- ◆ H₂O -- Water is made up of two parts Hydrogen and 1 part Oxygen
- ◆ Water is the most common substance found on Earth.
- ◆ Earth is called the water planet -- 80% of it is covered with water or ice, but only 2% of that water is drinkable.
- ◆ The human body is about 75% water!
- ◆ Water is the only substance on Earth that exists in all three forms -- gas, liquid and solid*? (*steam, water and ice)
- ◆ The average person USES about 175 gallons of water each day!



2



Here are some websites that will help you learn to **USE WATER WISELY...**

www.stopthedrop.org
www.twdb.state.tx.us
www.tnrcc.state.tx.us
www.awwa.org
www.subsidence.org
www.texaswater.org
www.groundwater.org
www.water.usgs.gov
www.water.usgs.gov/education
www.ga.usgs.gov/edu/index.html
www.epa.gov/water/kids.html
[www.publicworks.cityofhouston.gov/
utilities/conservation](http://www.publicworks.cityofhouston.gov/utilities/conservation)

Use Pool Water Wisely, too!

- **Backwash pool filters only when necessary.** If a timer controls the backwash, check and adjust the frequency of the cycle to ensure optimal efficiency. Backwashed water also goes into our sewer system and must be treated, thereby adding to the burden on the treatment facilities, as well.

- **During the months where you may heat your pool, reduce the temperature if possible, particularly when the pool is not in use.** A pool cover will help reduce evaporation and will also help hold the temperature.

- **Limit the frequency of pool refilling.** Only refill entirely when required for water quality or for maintenance (e.g., resurfacing) reasons.

- **When a crowd will be swimming, lower the pool's water level as much as practical to reduce the amount of water splashed out.**

- **Check the pool regularly for cracks and leaks and make repairs promptly.** If the water level drops more than an inch in one day, investigate for problems.

- **Use a pool vacuum that recycles the water when cleaning the pool.**

Courtesy of HCMUD 18

18

Using Water More Efficiently in the Bathroom

Some experts estimate that about 75 percent of the water used at home is used in the bathroom. Taking a shower instead of a bath will usually save water, and a low-flow showerhead may well be the single most effective water conservation measure you can take. Cutting back on the amount of water we use is often just a matter of applying common sense. It is time to stop taking our valuable water supplies for granted...and to develop a new mind-set about using it more efficiently.



- ◆ When building a new home or remodeling a bathroom, install a new low-volume flush toilet that uses only 1.6 gallons per flush. Toilets made before the 1980's generally required 5-7 gallons for each flush. By the early 1990's, new toilets were down to 3.5 gallons per flush. Today -- and since 1992

in Texas -- new toilets must only use 1.6 gallons or less per flush, so replacing an older toilet promises a significant savings.

- ◆ Test toilets for leaks. Add a few drops of food coloring to the water in the toilet tank, but do not flush the toilet. Watch to see if the coloring appears in the bowl within a few minutes. If it does, the toilet has a silent leak that needs to be repaired.

- ◆ Use some type of toilet tank displacement device to reduce the volume of water in the tank, but still provide enough for flushing. (Bricks are NOT recommended because they eventually crumble and could damage the working mechanisms.) Displacement devices are not recommended with new low-volume flush toilets.

- ◆ Regardless of the type and vintage of toilet, you can minimize the amount of water it uses by making sure the flush and fill components work properly, and by not using it as a "trash can" (to avoid unnecessary flushes).

Continued on page 4

In the Bath...Continued from page 3

◆ Check water line connections and faucets for leaks. A slow drip can waste as much as 170 gallons of water EACH DAY, or 5,000 gallons a month. This will increase your water bill.

◆ Repair leaky faucets promptly. It is easy to do, it costs very little and can make a substantial savings in your water bills.



◆ Carefully consider the ways you use water in the bathroom. Stop running the water while you brush your teeth, for example, just to rinse the toothbrush. The same method can be used for shaving and for washing hands.

◆ Consider installing a low-flow faucet aerator. This could actually help you save up to half the water you nor-

mally use at the sink.

◆ Insulate all hot water pipes to reduce the delays (and wasted water) experienced while waiting for the water to heat up.

◆ Set the thermostat on the hot water heater at a reasonable level. Extremely hot settings waste water (because it takes some extra cold water to make it usable) and energy and can even cause minor burns.

◆ Install a low-flow showerhead to limit the amount of water to less than three gallons per minute. Take shorter showers -- they use less water than baths do -- and shampoo your hair at the same time to save even more water. ■



4

Stop the Drop! *Continued from page 9*

Toilets are notorious water wasters because they can have “silent” leaks that are not detected until they have run up the water bill. One sure sign of a problem is if the toilet “runs” after being flushed...

which can *waste four to five gallons each minute* it does so.



The most common kind of toilet leak occurs when the flapper valve at the bottom of the tank does not “seat” properly, and water leaks around it into

the toilet bowl. This can sometimes occur without even being heard.

To check for a **leaking toilet**, you will need some food coloring (any color). Flush the toilet. Then put enough coloring in the tank to color the water. Do not flush the toilet again for at least an hour. If the water in the bowl of the toilet shows the coloring, there

is a leak that will need to be repaired.

Some types of toilet leaks are relatively easy to fix. The problem may be as simple as having too much water in the tank that it spills into the overflow tube. In that case, the float can be adjusted so the water shuts off slightly below the overflow tube.

If the flapper ball is worn or doesn’t seat properly, it should be replaced. Be sure to purchase the appropriate replacement part. If the handle needs to be “jiggled” constantly to keep the toilet from “running,” the chain (to the flapper) -- or the handle itself -- might be sticking, and can be corrected by a minor adjustment.

If none of these home remedies solve the problem, call a plumber...better to have professional help than flushing your dollars down the drain! ■



Rainwater Harvesting

Many people who are interested in conserving our precious groundwater resources consider harvesting rainwater for a variety of purposes around the house. The *Lone Star Chapter of the Sierra Club* points out that the water collected will be as pure and clean to drink as the collecting pipes and storage tanks -- assuming no problem with acid rain. The water can be aerated by adding a pump to the storage tank. Another important consideration if the water is to be used for drinking is the fact that small wildlife -- such as squirrels -- may be able to get inside the tanks unless protective screens are installed. Because of the purity concerns, most people who collect rainwater use it for watering lawns and gardens instead.

If you are considering collecting rainwater here are some things to consider. Before you develop a collection system, be sure to decide what you're going to do with the water -- drink it, water the lawn, do laundry -- then plan accordingly. Determine how you will get the water out of the storage container, and consider using a pump if it needs to exit with enough



force to water the garden with more than a trickle.

The biggest problem with rainwater collection appears to be the cost of storage. If you are not going to drink the water, the pricetag for storage tank, PVC pipe, and pump can reach \$500.

For more information, the Texas Water Development Board publication, "Texas Guide to Rainwater Harvesting, Second Edition," can be downloaded free from their website, <http://www.twdb.state.tx.us/assistance/conservation/rain.htm>. ■

16

Water Conservation Saves A Natural Resource and Money

According to the Texas Water Development Board (TWDB), we may waste as much as half of the water we use around the house during the summer months when 50 to 80 percent of our water consumption is used outside. Using this valuable resource more efficiently can save both water and money.

How do you use water for lawn and garden? When, and for how long do you water the lawn? Does the sprinkler hit the driveway, sidewalks or street? Does your sprinkler system turn off automatically when it rains? Do you wait for the plants or grass to look wilted before watering, or do you water on a regular basis?

We have always taken our water resources for granted, but with the Harris-Galveston Coastal Subsidence District mandate to reduce our dependency on groundwater, people are more interested in using our water supplies more efficiently to control costs, too.

Here are some simple tips to help you put a realistic, cost-effective water efficiency plan into effect

outside your home.

Use native plants and shrubs whenever possible in landscaping your yard. They generally require watering less frequently, and are often low-maintenance, too. The Texas Department of Agriculture County Extension Service points out that different varieties of grasses, plants and soils require different amounts of water.

In Houston, for example, St. Augustine grass has a high "thirst" requirement. Experts suggest that **grass should be watered separately from flower beds and landscaped areas**. When original landscape planning is an option, "zone" plants according to their water



Continued on page 6

Save Water...Save Money, continued from 5

requirements.

Use the kind of watering equipment to suit your “target.” Use sprinklers – ones that broadcast large drops are best – for the lawn areas, and soaker hoses or drip irrigation systems for trees, shrubs and flower beds.



Know when to water. Look for signs of stress – limp or curled, dull green blades of grass, or footprints left behind after walking across the lawn. In Houston, watering every five days -- to

deliver 3/4 to 1 inch of water (subtracting any rainfall) during summer months will wet the soil to a depth of 4-6 inches.

Water during early morning or evening hours when evaporation losses will be less than during the heat of the day. Avoid watering in high winds

that might send the droplets to places they are not needed, like streets or driveways.

Don't cut the grass too short. Longer blades will help reduce evaporation and shade the soil.

Use a good mulch layer in flower beds and landscape areas. This helps to hold down weed growth that can siphon off water from your plants, and helps retain the moisture in the soil. “Zoning” plants according to their water requirements in your landscape plan can also help you water more efficiently.

Finally, **use drip or trickle irrigation** – the slow, frequent application of small amounts of water to the soil area directly surrounding the plant roots – to take care of gardens and landscaped areas. Drip irrigation can save up to 60 percent of water delivered by other systems.

By using our water supplies efficiently, we can hold down our water bills -- and minimize the long-term impact on our pocketbooks as this valuable resource becomes more costly in the years ahead. 💧

6

Recycling Paper Saves Water, too

💧 The production of a ton of paper requires 17 trees, 7,000 gallons of water and more energy per ton than glass or steel. That's enough energy to heat a home for 6 months or run a television for 31 hours.

💧 One ton of recycled paper saves 3.3 cubic yards of landfill space; 7,000 gallons of water; 17 trees; and 4,100 kilowatt-hours of electricity.

💧 In 1999, 47.3 million tons of paper were recovered in the US -- an average of 347 pounds per person.

💧 Every day Americans buy 62 million newspapers and throw out 44 million.



💧 One ton of recycled paper uses 64% less energy; 50% less water; 74% less air pollution; and creates 5 times more jobs than one ton of paper products from virgin wood pulp.

💧 De-inked paper fiber is the most efficient source of fiber for the manufacturing of new paper products -- one ton of de-inked pulp saves over 7,000 gallons of water, 390 gallons of oil, and reduces air emissions by 60 lbs. compared to traditional virgin fiber processes.



Keep water in the refrigerator so you won't have to let the faucet run until it gets cold enough to drink... especially during the summer months.

14

Watering your Texas lawn... how do you know how much is enough?

The simple answer to how much is enough is that you should water when plants need water. Of course many variables can affect this. Different plants have different water needs. Soils have different water-holding capacities. Sprinkler systems differ. Some plants have a protective layer of mulch. As the temperature rises and the day lengthens, transpiration (water loss from the leaves) and evaporation from the soil increases. So June's lawn watering schedule will differ from the schedule used later in the summer.

Watering infrequently and deeply is the key to forcing grass and plants to grow deep roots so they can access water for a longer period of time and thrive through the long, hot summer. Water close to the surface evaporates long before the deeper moisture. Homeowners who water every other day are overwatering. Air is forced out of soil that is continually saturated. Since roots need air, overwatering

tends to promote very shallow roots.

As a general rule, proper watering means applying 1 to 1-1/2 inches of water per week. How long you run your sprinkler system depends on how much water the system applies. To figure out how long to run your system or sprinkler, place small empty 1 inch deep cat food or tuna cans (at least 3) over the area the sprinkler covers.

Water the length of time you think is correct. Each can should have the same amount of water, about 1 inch. If the cans contain less than 1 inch of water, you need to water longer. If the cans have an



Continued on page 8

Your Texas Lawn...continued from page 7

uneven amount of water, the distribution of water needs adjustment. Apply enough water to wet the soil to a depth of 4-6 inches.

Use a sprinkler that emits large drops of water that remain close to the ground, not one that sprays a fine mist into the air. Water during the early morning or evening hours since evaporation losses will be up to 60 percent higher during the day. Do not water on windy days, and set the sprinkler so that the lawn is watered, not sidewalks and driveways. Consider adding a rain sensor for your sprinkler system.

Remember not to cut the grass too short. Longer blades of grass will reduce evaporation and root stress since shaded soil will not dry out as quickly. Be sure to control any insects that attack your lawn quickly and completely.

A reasonable amount of fertilizing is necessary to develop the root system and to help keep the lawn healthy. Too much fertilizer, however, will lead to excessive growth, which will then require more watering. Many experts recommend leaving the grass

clippings on the lawn, which will minimize the need for additional fertilizer.

Add a little color...

Color looks great by the front door or in the back yard where you can see it from a window or the patio, and adding a small flower-bed or a container can make a great impression.

Measure the area and figure out how many square feet it is to help you determine the number of plants and how much soil amendments and mulch to purchase. If a plant grows 2 feet wide, you need one plant every 2 feet. If the plant grows 6 inches wide, you need a plant every 6 inches. Once plants are in the ground, cover the soil with a good layer of mulch and water it gently. The water will settle the soil and mulch. Water every day for about a week if it does not rain. ♦



8

Water lawns in the early morning.
Install rain sensors on sprinkler systems.

- ♦ Fix leaky faucets and hoses... they waste water and money.
- ♦ Water the grass...not the sidewalk and street.
- ♦ Plan water cycles according to each type of plant or grass.
- ♦ Mid-day sun -- for mad dogs and Englishmen -- NOT for sprinklers.
- ♦ Use a broom to clear away debris, instead of using the hose.

Kitchen and Laundry...continued from page 11

◆ Avoid doing wasteful things like making a huge pot of coffee if you're only going to drink one or two cups -- or throwing away a glass full of ice after you drink the water. Why not pour it on a parched house plant on the window sill instead? These things may not seem like much, but they add up over time.

◆ Did you know that doing the laundry requires about 14 percent of the water used at home? In fact, 32 to 59 gallons of water are required for each washing machine load. Wash only full loads of clothes when



using your washing machine.

◆ Use the lowest possible water level setting on the washing machine.

◆ Use cold water whenever possible. This saves energy, too, and conserves the hot water for other uses. This is also better for most of today's fabrics. ■



12

Be a Leak Detective...Stop the Drop!



Unlike some other kinds of leaks, a leaking faucet is obvious... you can see it, you can hear it. If a seldom used tap is leaking, however, that may not be the case, and it will continue to drip, drip, drip until a significant amount of water...and your money...have gone right down the drain.

Even the smallest drip can waste up to 20 gallons per day. That's about 6 cents per day, \$1.83 per month, or \$21.96 per year! In most cases, a leaking faucet is caused by a worn washer or "O" ring, and they are not difficult to replace.

Water softeners, sprinkling systems and swimming pools with automatic fill devices are other possible source for leaks.

◆ Repair **leaky faucets** promptly. It is easy to do, it costs very little and can make a substantial savings

in your water bills.

◆ Check water line connections and faucets for leaks. A slow drip can waste as much as 170 gallons of water EACH DAY, or 5,000 gallons a month. This will increase your water bill.

◆ Set the thermostat on the hot water heater at a reasonable level. Extremely hot settings waste water (because it takes some extra cold water to make it usable) and energy and can even cause minor burns.

◆ Make sure that the line from the water meter to your house is free of leaks. To check, turn off all indoor and outdoor faucets and water-using appliances. The water meter should be read at 10 to 20 minute intervals. If it continues to run or turn, a leak probably exists and needs to be located.

Toilets are notorious water wasters because they can have "silent" leaks that are not detected until they have run up the water bill. One sure sign of a problem is if the toilet "runs" after being flushed... which can waste four to five gallons each minute it does so.

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The average person uses about 175 gallons of water a day!

10



Using Water More Efficiently in the Kitchen & Laundry

About 8 percent of the water used at home takes place in the kitchen. That may not seem like a significant amount, but when it is wasted, it is simply dollars down the drain. Concentrate on developing a new mind-set about using water more efficiently...and this can start in the kitchen.

- ◆ When purchasing new appliances, check the water requirements of various models and brands. Some use less water than others.

- ◆ Scrape the dishes clean instead of rinsing them before placing them in the dishwasher.

- ◆ Use the garbage disposal sparingly, too. It takes a lot of running water to operate. Consider starting a compost pile -- that will help your garden, as well.

- ◆ Fill a pan of water -- or put a stopper in the sink -- for washing and rinsing pots, pans, dishes, and cooking implements rather than just letting the water run.

- ◆ Only run the dishwasher with a full load. This saves water, energy, detergent and money.

- ◆ Keep a container of drinking water in the refrigerator. Running water from the tap until it is cool enough to drink is wasteful.

- ◆ Use a small pan of cold water when cleaning vegetables rather than letting the water run over them.

- ◆ Use less water for cooking. Not only does it save water, but also food is more nutritious when the vitamins and minerals are not “boiled” out of them and poured down the sink.

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