



GREEN HOME AND GARDEN TIP #12

BY GREEN HOME AND GARDEN COMMITTEE,
Texas Master Naturalist

This month's tip is provided by Texas Parks and Wildlife Department

Rainwater Harvesting Makes Cents

Almost everyone is afraid of something. For some people it's the uncertainty of the dark, for others it may be snakes, spiders, needles, dentists, or even black cats. For many Texans especially those in urban areas just going to the mail box these days can be a dreaded experience. Forget about the cell phone bill, the credit card bill, and the mortgage payment those are usually, pretty predictable, but the real shock and awe comes with the water bill. Over the past few years water in Texas has become a commodity more precious than gold. As the state population continues to grow unchecked, the demand for water has increased exponentially while supply has grown very little. Water is a finite resource. There are no inexpensive ways to make more water to meet the needs of the burgeoning Texas population. Water woes have become a modern day civil war of sorts pitting the needs of farmers and ranchers against urbanites, suburbanites, and industry. What can be done? What can the average homeowner, farmer, rancher, or manufacturing industry do to address the water shortage? The answer is rainwater harvesting.

In urban areas, every time it rains millions of gallons of rainwater are wasted as runoff into storm sewers. Have you ever stopped to think about how much money is literally going down the drain when water gets away? Think for a minute how much you could reduce your water bill by capturing some portion of that runoff to use around the house for your everyday water needs. Rainwater is valued by many for its purity and softness. It's nearly neutral pH and lack of disinfectants, salts, minerals, and other natural and man-made contaminants make it perfect for watering plants, washing clothes, watering the lawn, even drinking. There are five basic components to a rainwater harvesting system: (1.) the catchment surface, (2.) gutters and downspouts, (3.) leaf screens, first-flush diverters, and roof washers, (4.) one or more storage tanks or cisterns, and (5.) the delivery system. If the harvested rainwater is to be used for household purposes then a treatment/purification system will also be necessary.

The most common catchment surface is the roof of a building or house. The quality and quantity of the harvested rainwater is dependent on the roofing material, the surrounding environment and the size of the catchment. Runoff from some roofing surfaces may not be suitable for human consumption due to leaching of toxins from the materials but is still suitable for landscape irrigation. Gutters and downspouts channel the water from the catchment surface to the storage tanks. Since a roof can be a collection for dust, leaves, twigs, dead insects, animal feces, pesticides, and other airborne residues a first-flush diverter is installed to route the initial flow of water from the catchment surface away from the storage tanks. Opinions vary on how much water to divert, but a minimum of 10 gallons per 1,000 square feet of collection surface is a good rule of thumb. A roof washer is placed in line between the downspouts and the storage tanks to filter out small debris before it enters the storage tanks. Storage tanks come in a plethora of shapes, sizes, and materials largely dependent on the end use of the harvested rainwater and the financial restrictions of the one installing the system. Finally, the delivery system is another component largely dependent on the end use of the harvested rainwater. If the system is to be used solely for irrigation the force of gravity may be sufficient to deliver the desired quantity of water, however, if the system will be used to supply a household then a pressure tank and pump or an on-demand pump may be necessary to deliver the water in the desired quantity and pressure.

In theory, approximately 0.62 gallons of rainwater can be collected per square foot of catchment surface per one inch of rainfall. A water-conserving household, one in which water-conserving fixtures, appliances, and practices are employed, will use 25-50 gallons per person per day. Households that don't practice such measures can easily use more than 50 gallons per person per day.

There are many financial incentives available to those wishing to install a rainwater harvesting system for commercial or residential use. In Texas, by law rainwater harvesting equipment and supplies are exempt from sales tax. County appraisal districts in Texas have the ability to exempt from taxation all or part of the assessed value of a property on which water conservation modifications have been made. Many municipalities, including the City of Austin and the San Antonio Water System, offer rebates to customers to cover part of the cost of installing rainwater harvesting systems on their property.

For more information on rainwater harvesting visit the Texas Water Development Board website at www.twddb.state.tx.us.

The Texas Master Naturalists is a group of informed volunteers who are interested in learning about and educating others about the area of Texas where we live and with preserving our natural heritage. We are co-sponsored by the AgriLIFE Extension (a Texas A&M System service) and Texas Parks and Wildlife. For more information about our group, log on to <http://gcmn.tamu.edu> or www.coastalprairie.org.

The Green Home and Garden Workshop is an ongoing project co-sponsored by the Gulf Coast chapter and the Coastal Prairie chapter of Texas Master Naturalists. Our mission is to interest and inform people about safe and eco-friendly ways to garden and maintain their homes. We have a workshop event once a year. The next workshop will be held in February, 2009.