



# Capturing Mother Nature's Bounty – *Water*

by Lee Edwards, President of The Greenery

Earth (and money) conscious consumers are making use of natural resources in innovative ways.

Rain barrels, cisterns, water catchments, rainwater harvesting, it is known by many names but the concept is the same in all cases; capturing mother nature's bounty in a container to lessen the burden on your current supply of water. Home builders are quickly learning that it's in the forefront of the green movement here in the United States.

If you want to go green and make a difference, understanding the terminology and the best choices will be invaluable for a long term contribution to the environment and to your own home water usage, which translates to lower water bills and less storm water runoff.

Where did the idea of catching water for usage start; well the practice of harvesting rainwater is not a new idea. Rainwater harvesting has been in use for millenniums anywhere there is a shortage of plentiful groundwater. Currently, outside of the United States, there are regions where fresh water for domestic use has always been in short



supply with rain harvesting considered a way of life. Arid islands like The Bahamas and Bermuda require the use of water cisterns in homes. Rainfall is their only source of fresh water collected on roofs and gutter systems and stored in tanks.

So what is one of the most effective ways to make a difference in personal water usage in the Lowcountry? Landscape irrigation systems are the biggest users of water for residential properties. Though consumers are led to believe that a 50 gallon rain barrel is the answer, think bigger when building your home or upgrading your landscape and irrigation system. Irrigation that utilizes a rain cistern is ideal. Here in the Lowcountry of South Carolina, harvested rainwater can easily be used in irrigation systems. Did you know a typical fifteen minute summer afternoon shower in our area, can produce as much as 2000 gallons of rain water depending on the size of the roof? The typical irrigation system for a medium to large lawn might use 1500-2500 gallons of water per cycle during the summer months. Running two or three times a week that adds up to between 12 – 30 thousand gallons per month! A homeowner who employs the use of a 5-15 thousand gallon cistern could stock their irrigation system and make a substantial difference in potable water usage.

A system can be as simple or complex as the owner prefers. The basic components of the system are gutters or pipes referred to as a catchment system that directs the water into a cistern (water tank). The water is stored in the cistern until it is sent by a pump through a filter to the irrigation system. Most systems will have a method to refill the cistern with potable water for periods of low rainfall. Water catchment systems that are going to have the most positive impact would be one with a large capacity water cistern (ideally 10,000 gallons or more).

Water cisterns can be placed underground or above ground. They can be made of plastic, cement, fiberglass or any other suitable material that will hold water. In the Lowcountry, the most common placement is above ground as our high water table could encourage an in ground cistern to “float up” in dry periods. This does not usually pose a problem because most homes here have to be elevated to meet building requirements so it is relatively easy to store a cistern under the home. While it is most feasible to build a system during new home



**TOP** A water harvesting system usually has three vital parts—components for collecting and directing the water to a cistern; a cistern to collect and hold the water; and a filter and pump that send the water into an irrigation system for reuse. **LEFT** Cisterns can be placed either above or below the ground.



**TOP** For light usage, a small cistern can be used to collect rainwater. **LEFT** Decorative cisterns and barrels can be used in place of industrial ones to add interest to your yard. [www.rainbarrels.org](http://www.rainbarrels.org) **BELOW** Water harvesting plans, like this one from [www.rainxchange.com](http://www.rainxchange.com) can incorporate a backyard water feature that is beautiful and resourceful.

construction, one can also be retro-fitted for an existing home. There are several choices in fabrication for cisterns as well. Plastic tanks and custom made tanks of concrete or fiberglass are available.

What kind of front end investment does this require? A larger system may range from five to ten thousand dollars depending on the size and features selected. If you take the example above where one uses 2500 gallons on a typical irrigation cycle it is not uncommon to see a \$250 water bill per month, just for irrigation. If you are irrigating throughout the growing seasons of the year, you can see that a rain harvesting system in a few short years can pay for itself and then after be a yearly cost savings.

We talked about the history, technology and cost of rain harvesting but what about its affect on the environment. Why is it important now? How will it help future generations? The simple answer is saving a natural resource that allows others in the future to utilize it. The more critical answer is that as this region is developed all of our natural resources are going to feel the strain One of those resources in our area is the aquifer in the Savannah River where we get most of our potable water. Natural resources do run out even water! . Remember drought conditions in Atlanta, Georgia in 2007? So we need to do our part to conserve this life essential resource. If you take the example of 2500 gallons per week let's assume that you are able to reduce potable water usage by half. Multiply it by a mere 40,000 homes then use 24 weeks for the growing season that comes to 1.2 billion gallons of water per year. That is in our little area alone. Imagine the trillions or more gallons of water that could be saved across the entire United States if these systems come into widespread use.

There is another identified major concern where rain harvesting can and will help. All over the nation and especially here in the Lowcountry storm water runoff and its pollutants are a hot topic of discussion. Rain harvesting will lessen this concern tremendously because of the natural filtration that occurs. If you take those same 1.2 billion gallon of water per year, instead of ending up as storm water they would be filtered through the earth after irrigation on the way back to the ground water table. This is different from the water coming off your roof hitting the driveway, going down the street and potentially ending up in one of our streams or water systems all the while carrying pollutants.

Today, the use of rain water harvesting systems is even more beneficial and important because of stormwater runoff as well as shortages in water supply. If we are going to leave a better environment for the next generations then water supply and usage must be addressed. **UCI**

