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Rain Barrels: When It Rains It Stores

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As Florida's population grows, it is important to find ways to conserve water since the amount of usable water is not increasing. Collecting and storing rainwater is an old-fashioned method that can be incorporated into property management and landscape maintenance. Harvested rainwater is a source of irrigation water during periods of drought and a better quality of water for plants because it doesn't contain chlorine, lime, salts, or calcium. In addition, the water can be used for mixing fertilizer and washing landscape tools. Collecting and storing water also saves money and reduces demand on the municipal water system, especially during the dry season months.

A rainwater collection system can be as simple as a small barrel to cisterns that hold thousands of gallons of rainwater. The components involved in every rainwater harvesting system are the following:

1. Catchment area, which is any area that collects or sheds rainwater;
2. Conveyance system, which is a way to move the water like a guttering system;
3. Storage tank, which can be made of various materials and can be located above or below ground;
4. Filtration placed where the water enters the conveyance system or the storage tank; and
5. Water distribution like a watering can, soaker hose, or garden hose.

By analyzing your property, you can decide on the type of container that will work best for you and your property's needs.

A cistern is a type of storage tank that can be used both above and below ground. A 15,000-gallon cistern is present at Hillsborough County's main courthouse and designed to supply water to the landscape. The collected water is stored in an underground tank and two concrete columns. Another example is the Florida House Learning Center in Sarasota. The center has two cisterns that hold 2,500 gallons of rainwater each, and this water is used for irrigation and other operations in the center. Cistern construction can be complicated depending on the size, so an engineer should be consulted before one is installed. Also, contact your county's building and health departments to see if a permit is required.

If a cistern is too large for your needs, a rain barrel may be the right fit. A rain barrel is a plastic food-grade barrel (about 55-gallons) that is modified by adding a spigot at the bottom. It can be covered with a screen mesh and placed under an area of roof that sheds a lot of water or connected directly to the gutter. To increase storage capabilities, extra barrels can be linked together. The barrel can also be painted to increase the aesthetic appeal. Although manufactured rain barrels can be purchased, they are very simple and inexpensive to make on your own. Your County Cooperative Extension Service can provide you with instructions.

These water collection and storage systems help keep thousands of gallons of water from contributing to the nonpoint source pollution problem. Our waterbodies benefit by reducing the amount of stormwater runoff that flows off our lawns and impervious surfaces. During a rainstorm that takes place over a 24-hour period and produces one inch of rain, more than 700 gallons of water will run off a 1,200 square foot roof. When this runoff reaches our waterways, it negatively impacts the water quality by carrying fertilizers, pesticides, and loose soil. The fertilizer pollutants result in algal blooms, while the pesticides are toxic to our aquatic organisms. The loose soil can smother aquatic plants and less mobile wildlife along with making the water cloudy. This cloudiness decreases the amount of light that reaches the bottom surface, which causes harm to aquatic organisms that rely on sunlight for survival such as seagrass beds.

Another benefit is reducing the amount of groundwater used for irrigation. A majority of our residential water comes from groundwater aquifers, and over 50% of this residential water is used outdoors. If too much groundwater is removed from the aquifer without being replenished with rain, salt-water intrusion can occur if you live along the coast. This makes the water unusable and increases the treatment cost. Also, using groundwater for irrigation decreases the groundwater that is available for drinking water because about 95 percent of our drinking water comes from groundwater. Collecting and storing rainwater can help us all by making more groundwater available for drinking water.

I encourage you to look into adding a rainwater collection system to your property. Not only do we benefit from having a source of irrigation water during periods of drought, a better quality of water for plants, and saving money, our environment benefits as well.

Contact your county extension service for more information about harvesting rainwater.