Environment: Rainwater can be harvested for use at home

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Rainwater is a free source of nearly pure water. It is used to supply potable (drinkable) water and nonpotable water. For nonpotable uses, like watering landscapes or home gardens and orchards, it is ready for use as it falls from the sky. For potable uses, rainwater must be treated to remove or kill disease organisms that may be present. Treatment is not too complex and can consist of two in-line filters and treatment with ultraviolet light to kill any pathogens that might have been on the roof.

For livestock, larger systems can be designed to provide supplemental water in a pasture or in some instances, all of the water required by stock. For wildlife, small systems often called “wildlife guzzlers” can be constructed to promote quail and other wildlife species in water-short areas.

Who harvests rainwater?

For thousands of years the world has relied upon rainwater harvesting (RWH) to supply water for household, landscape and agricultural uses. Before city water systems were developed, rainwater was collected (mostly from roofs) and stored in cisterns or storage tanks.

Near Alpine and Fort Davis, the Chihuahuan Desert Research Institute (CDRI) has installed rainwater harvesting for their supplemental landscape irrigation. Also, a commercial wildlife guzzler is nearby on the rangeland for wildlife water.

An old working cistern at the Grey Mule Saloon in downtown Fort Stockton can be visited. In South Texas and the Rio Grande Valley, the central plazas of towns were not only gathering places, but also the collection surfaces for underground tanks where water was stored for use by adjacent shops and homes.

Historic structures like the Stillman House in Brownsville, the Fulton Mansion near Rockport, the Freeman Plantation near Palestine and the Carrington-Couvert House in Austin collected rainwater from their roofs for household use. These systems may no longer be in use, but they are clear evidence of the reliance placed on rainwater by early Texans. Unfortunately, as Texans bought windmills or electric power for wells, the earlier home rainwater harvesting systems were dismantled and then forgotten by younger generations.

Today, many towns, cities and rural residents are rediscovering an interest in rainwater harvesting – sometimes out of necessity due to overstressed aquifers and drought-plagued surface water supplies. Several cities in Texas have begun programs to educate the public on RWH or have cost share arrangements in place to encourage its use. The Lady Bird Johnson Wildflower Research

Center at Austin has a large system for drinking water and for irrigating research plots and grounds.

In Arizona and many of the Rocky Mountain states, rainwater harvesting systems for livestock are in use on Indian reservations, Forest Service or Bureau of Land Management rangelands where groundwater is either too deep for windmills or non-existent and surface water is either rare or of poor quality.

Many parts of the world, including Hawaii and the entire continent of Australia, promote rainwater as the principal means of supplying household water.

What are the advantages of using rainwater?

– Rainwater harvesting promotes self-sufficiency and fosters an appreciation for water as a resource. It also promotes water conservation, while providing a "new" water resource.

– Rainwater harvesting also conserves energy as the energy input needed to operate a centralized water system is bypassed. Many systems require only a small pump to create water pressure in household pipes and many non-potable systems operate gravity flow.

– Local erosion and flooding from impervious cover associated with buildings is lessened as a portion of local rainfall is diverted into collection tanks with less polluted stormwater to manage.

– Rainwater is one of the purest sources of water available. Its quality almost always exceeds that of ground or surface water. It does not come into contact with soil or rocks where it can dissolve minerals and salts nor does it come into contact with many of the pollutants that are often discharged into local surface waters or contaminate ground water supplies.

– Rainwater often has a nitrogen content which provides a slight fertilizing effect for plants.

– Rainwater is soft. It can significantly lower the quantity of detergents and soaps needed for cleaning. Soap scum and hardness deposits do not occur. There is no need for a water softener as there often is with well water. Undesirable salts used by most water softener systems are not added to our wastewater treatment plants and reuse waters. Water heaters and pipes are free of the deposits caused by hard water and should last longer, thus saving money.

There are numerous references and sources of information on rainwater harvesting available to the public. Many counties across West Texas are now planning demonstration sites that will be available to view. Contact your local county extension office for assistance or contact me directly at 432.336.8585.

The Chihuahuan Desert Research Institute will hold a rainwater harvesting workshop, including drip irrigation, on Saturday (May 21). Call 432.364.2499 to register.

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