

Rainwater Harvesting with Rain Barrels

A "TAKE CARE OF TEXAS" GUIDE

What Is Rainwater Harvesting?

Rainwater harvesting is the collecting and storing of rainwater. You can collect rainwater from a roof, which is the most common method, and store it in catchment tanks, such as rain barrels.

A Brief History of Rainwater Harvesting

Before there were public water utilities, many American households harvested rainwater. With the development of large, reliable water treatment and distribution systems, the appeal of rainwater harvesting diminished.

However, as the environmental and economic costs of providing centralized water escalate, a new interest

in rainwater harvesting has emerged. The easiest way to begin harvesting rainwater for your home is to use a rain barrel to collect water for your container plants, landscape, and garden.

Reasons for Harvesting Rainwater

Benefits

- The water is free.
- Rainwater is better for plants than chemically treated water.

- Rainwater harvesting can help reduce flow to storm water drains and reduce stream pollution.
- Using stored rainwater can reduce utility bills.

Other Incentives

Texas Tax Code 151.355 exempts rainwater-harvesting equipment from sales tax. To download the Texas Sales and Use Tax Exemption Certificate, visit <www.window.state.tx.us/taxinfo/taxforms/01-339.pdf>.

HOW TO CONSTRUCT A RAIN BARREL

Materials

- 55-gallon polyethylene plastic barrel
- 3/4-inch hose spigot
- 3/4-inch PVC closed nipple
- window screen
- Teflon cement
- water hose (optional)
- bricks or concrete blocks (optional)

Tools

- drill with a 1-inch paddle bit
- utility knife or jig saw

Instructions

- 1. Inflow.** Use the utility knife or jig saw to cut a hole in the top of the barrel approximately the same diameter as your gutter downspout.
- 2. Spigot.** Measure 3 to 4 inches from the bottom of the barrel and drill a 1-inch hole. Screw the spigot halfway into the barrel, apply some Teflon cement to the exposed threads, and continue to twist until tight. In addition, you can use a rubber washer, metal washer, and a lock nut to more firmly secure the spigot to the barrel from the interior.
- 3. Overflow.** Measure 3 to 4 inches from the top of the barrel and drill a 1-inch hole. Twist in the 3/4-inch PVC closed nipple about one-quarter of the way, apply Teflon cement to the exposed threads in the middle portion of the coupling, and continue to screw it in, leaving 1 inch of thread exposed.
Connect the hose to the pipe coupling overflow spigot at the top of the barrel. You can run this hose into another barrel or to a soaker hose (which will evenly distribute excess water and help avoid flooding).
- 4. Downspout.** Place the barrel directly below the downspout. You will need to reconfigure the downspout to flow into the hole. If you like, place the barrel on concrete blocks or bricks. Raising the barrel will allow you to get a bucket under the spigot, and will facilitate leveling the area where your barrel will sit.
Cover the hole on the top of the barrel with the window screen, to prevent sticks, rocks, or dirt from getting into it. Screens also keep mosquitoes out. Secure the screen with a few bricks or rocks to keep it in place.



Some cities and counties offer rebates or reduced costs for rain barrels. Check with your local government or water utility to find out if incentives are available in your area.

Troubleshooting

Like most things around your home, your rain barrel needs a little regular attention to keep working smoothly. To keep it in the best shape:

- Use all the water in the barrel regularly.
- Clean your gutters at least twice a year to reduce debris.
- Once a year, during a dry spell, tip the barrel over and rinse it out with a hose.

Any standing water will begin to smell after a while, especially if it contains organic matter, such as leaves. Smelly water won't hurt your plants, but it can be a nuisance. To avoid it:

- Use all the water in the barrel within a month of collecting it.
- Put a capful of chlorine bleach into the water. This small amount won't hurt plants.

A well-sealed screen will help keep mosquitoes from getting into your rain barrel. However, mosquito larvae may still wash in from your gutters. You can help prevent mosquitoes from breeding and keep them at bay by emptying the barrel regularly. You can also add mosquito dunks to the water. These dunks contain a nontoxic bacterium that kills mosquito larvae. It's safe for your plants, and it will not harm pets or people. You can find this product at most garden-supply stores.

The Next Steps

Remember that the water collected in a rain barrel as described in this publication is intended to be used for outside purposes only, such as watering your container plants, landscape, and garden.



OTHER WATER CONSERVATION TIPS

- Check your faucets and fix any leaks you might have, to save up to \$35 a year on utility bills.
- Wait until you have a full load of laundry before washing, or use a lower water-level setting.
- Avoid overwatering your lawn. When needed, water 1 inch, once a week. To water only 1 inch, place a 6-ounce tuna can on your lawn and stop watering when it is full.
- Invest in water-efficient plumbing fixtures. Replacing an older toilet with a water-efficient model can save up to 4,000 gallons of water a year. Installing a faucet aerator can cut water consumption in half. For additional information on water-efficient products, visit the Environmental Protection Agency's WaterSense website, at <www.epa.gov/WaterSense>.
- If you decide that you want to store even more rainwater, you can connect two or more rain barrels.
- To safeguard the quality of your drinking water, never submerge a water hose in a rain barrel.
- To collect rainwater for extensive landscape use, you can install larger systems using cisterns.

Additional Information

For information on building a complex rainwater harvesting system for landscape use, see *Rainwater Harvesting* (GI-404, reprinted courtesy of the Texas A&M AgriLife Extension Service). You can download a copy of this manual at <www.tceq.texas.gov/publications/gi/gi-404.html>. Texas A&M AgriLife's website also discusses rainwater harvesting and lists publications, training programs, and suppliers of rainwater-harvesting equipment.* Visit "Rainwater Harvesting" at <rainwaterharvesting.tamu.edu>.

The Texas Manual on Rainwater Harvesting, from the Texas Water Development Board, offers comprehensive information on all levels of rainwater harvesting. Download a copy at <www.twdb.texas.gov/innovativewater/rainwater/docs.asp>.

For more water-saving tips and other ways to do your part, visit <TakeCareofTexas.org>.

This Old House offers "How to Install Rainwater Collection," a video with step-by-step instructions on how to set up a rain barrel. This video is available at <www.thisoldhouse.com/toh/video/0,,20045365,00.html>.

Contact the Texas Comptroller's office at 800-252-5555 for questions about the exemption of rainwater harvesting equipment from state sales tax.

*The listing of suppliers is provided by Texas A&M AgriLife Extension solely to inform the reader of the different types of equipment and products that are available for harvesting rainwater. Neither Texas A&M AgriLife Extension nor the TCEQ endorses any particular vendor, manufacturer, or product.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

How is our customer service? www.tceq.texas.gov/customersurvey

The TCEQ is an equal opportunity employer. The agency does not allow discrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual orientation or veteran status. In compliance with the Americans with Disabilities Act, this document may be requested in alternate formats by contacting the TCEQ at 512-239-0028, Fax 512-239-4488, or 800-RELAY-TX (TDD), or by writing P.O. Box 13087, Austin, TX 78711-3087.

Printed on recycled paper using vegetable-based ink.

TakeCareOfTexas.org