

# Slow the Flow! Rain Barrels and Water Conservation in the Garden

For many homeowners, gardens provide a source of beauty and contentment. Gardens also provide an opportunity for wise water management practices that positively impact both the quality and quantity of water in the local watershed.

We all live in a watershed. But what exactly is a watershed? A watershed is best defined as an area of land where all the water that is under the land or drains off the land goes to the same place, usually a creek, river, lake, ocean or other body of water.

Perhaps it is easiest to think of a watershed as a gigantic drainage basin or area in which all water, sediments and dissolved materials flow from the land into a common body of water. According to the U.S. EPA, the continental United States has 2110 watersheds.

Why are watersheds important?

Clean water and healthy watersheds are determined by both the quality and the quantity of water within the watershed.

Water quality refers to the chemical, physical and biological characteristics of water with respect to its suitability for a particular purpose; consider water for drinking versus water for washing the car.

Water quantity relates to the amount of impervious surfaces, such as roadways and rooftops, which cannot absorb water. This water runoff results in erosion and flooding. Impervious surfaces channel pollutants directly into streams without being processed by infiltrating the soil during transport. Best management practices suggest that, as a homeowner, it is important to keep the water that falls on your property . . . on your property! Don't let water run off your property.

Here's what you can do to help keep our watersheds healthy:

- reduce storm water runoff and increase local recharge
- reduce fertilizer, pesticide and herbicide use
- clean up pet waste which introduces harmful bacteria into the water supply

Garden practices that incorporate rain barrels minimize storm water runoff by retaining water for later use in the garden.

Rain barrels collect water that would normally flow directly off the roof, through gutter down spouts, and become storm water runoff. Using this runoff for your garden (1) conserves water for plants during dry periods, (2) saves you the time that you would have spent watering garden plants, and (3) provides you with a consistent supply of free soft (no chlorine, lime or calcium) water for outdoor use.

Rain barrels come in many shapes and sizes. It is best to select a barrel that is sealed to prevent children or animals from accidentally falling into the barrel.

Rain barrels operate on a gravity-fed system so they usually need to be elevated on top of a single or double layer of cinderblocks or the like. The existing down spout should be interrupted at the correct height of the barrel's water intake opening using a diverter and/or flexible tubing. These are readily available online from sources such as Spruce Creek Rainsaver as well as in some local hardware stores.

It's critical to connect an overflow hose to the barrel. The water overflow hose should be able to accommodate excess water so that, during a significant rain event, water can exit the barrel without gushing out and onto the building foundation.

The amount of rain that will run off the roof can be readily calculated using the following formula:

#### Sample Rain Calculation

Assume ½ inch of rain (0.5 inch) on an 800 square foot section of roof

Standard value - 1 inch rain on 1,000 sq. ft. roof yields 623 gallons of water.

$800 \text{ sq. ft.} \times 0.5 \text{ in.} \times 623 = 249,200$

$249,200 \text{ divided by } 1,000 = \text{about } 250 \text{ gallons of storm water runoff}$

If you have a 54-gallon barrel, it is very important to have an overflow pipe!

The contents of the barrel can be used for hand watering or may be connected to a soaker hose that is attached to the barrel's spigot. If a soaker hose is connected, leave the barrel's spigot valve open continuously (24/7), this will allow the water to infiltrate the soil at a slow pace.

If the barrel usage rate slows down over time, shingle dust from the roof may have clogged the pores and accumulated in the soaker hose requiring the soaker hose to be flushed out by running water from an outdoor faucet through the soaker hose.

Make sure the barrel has a fine mesh screen to prevent mosquitoes from entering and laying eggs. As an added precaution, a "Dunks" or similar biological pest control (*Bacillus thuringiensis* (Bt) 10%) may be tossed into the barrel to kill mosquito larvae. "Bt" is not harmful to pets, birds or insects.

It is not recommended that water from a rain barrel be used on food crops as roof shingles may contain undesirable materials.

To winterize the barrel simply flip the diverter switch or disconnect the downspout and reconnect the old downspout. Finally, flip the barrel upside down. Accumulated sediment can be flushed out of the barrel by removing the mesh screen during spring installation.

Do-it-yourself rain barrels are popular and there are numerous sources of information on the internet. Check with your local county extension service or search YouTube for the Penn State Three Minute Gardener - keywords "rain barrel." This short video clip provides precise instructions for making your own rain barrel.

Rain barrels are easy to install, maintain and use. Most importantly, they provide an effective way to conserve water and keep our watersheds healthy and our creeks, rivers and lakes free from contamination.

For more information visit:

<https://extension.psu.edu/rain-barrels>

<https://www.pwdraincheck.org/en/stormwater-tools/rain-barrels>

<https://www.epa.gov/soakuptherain/soak-rain-rain-barrels>