

Rain Barrel Tip Sheet

What is a rain barrel?

A rain barrel is a system that collects rainwater from your roof that would otherwise be lost to runoff. Rainwater harvesting is not new. A larger version of a rain barrel, known as a cistern, has been used for centuries. Rain barrels come in a wide variety of materials, designs and colors. A common size rain barrel is 55 gallons.

Why use a rain barrel?

The Fox Valley area receives an average of 22.23 inches of rain over the period from April through October. By harvesting some of that rainwater, you can help the environment by:

- Reducing non-point source water pollution
- Reducing erosion from storm surges into our streams
- Reducing the amount of treated city water used for watering lawns and gardens.



Calculating water runoff from a roof:

Rainwater collection from roofs can be calculated using the following formulas:

- 1 inch of rain on a 1,000 square feet (93 m²) roof yields 623 gallons of water; or
- 1 cubic foot equals (12 inch by 12-inch (300 mm) by 12-inch (300 mm) cube) equals 7.48 gallons; or
- 1 millimeter of rain on a 1 square meter surface yields 1 liter of water.

For example, if your downspout drains a roof area that measures 12 ft by 20 ft the surface area of your collection is 240 sq.ft. (12 ft x 20 ft). There is approximately 7.48 gallons per cubic foot. A ½-inch rainfall on that surface will produce approximately 75 gallons. [(240 ft²)(0.5 inches)(1 ft/12 inches)(7.48 gallons/1 ft³)]

So what do you do if you have more than 55 gallons of water from a rainfall? A diverter or overflow hose will let excess water from the rain barrel escape.

Safety considerations:

A rain barrel must be secured on a firm level surface. Water weighs 8.34 lbs. per a gallon, so a full 55-gallon rain barrel weighs approximately 460 lbs, and tipping is a risk if it is unsecured, or on uneven ground.

The water from the rain barrel should never be used for drinking, cooking, or other potable uses.

Maintenance:

Maintenance requirements for the rain barrel are minimal and consist of regular inspection of the barrel and the parts. Remove any debris that has accumulated on the lid that might block the screen mesh. You should also routinely clean the inside of your barrel to reduce algae growth.

How to prevent mosquitoes:

To prevent adult mosquitoes from laying eggs in the water of your rain barrel, make sure the rain barrel is tightly sealed. Do not let water accumulate on the top of your rain barrel. Some rain barrels will have a lip on the top. A drain hole can be drilled in the side of the barrel lip to allow water to escape. Some rain barrel designs include fine mesh screens. Make sure these screens fit the top of the barrel securely so that the mosquitoes are not able to get into the barrel.

In addition to trying to keep adult mosquitoes out of your rain barrel in the first place, make sure the water does not stay in the rain barrel long enough for the mosquito eggs to hatch and grow to adulthood. Try to empty the rain barrel within 2-3 days after a rain event.

Winterizing rain barrels:

Disconnect down spouts prior to first hard freeze, and return down spouts to their regular configuration making sure to extend them away from building foundations. Drain the rain barrel and turn it upside to prevent freezing, and cracking or store in a covered area like a garage. Store hoses, and clean and store mesh screens.

Painting rain barrels:

Rain barrels can be painted to better blend into the landscape, or architecture. Wipe down rain barrels with a one to one mixture of water and vinegar. Rough the surface of the barrel with a piece of fine grit paper. Paints must be able to withstand climate conditions and be compatible with barrel material. Plastic barrels can only take paint that is specially made for plastic.