

# Harvesting Rainwater with Rain Barrels, an Old Idea with a New Following

Collecting rainwater for use during dry months in rain barrels or other depositories is an ancient and traditional practice. Historical records show that rainwater was collected in simple clay containers as far back as 2,000 years ago in Thailand, and throughout other areas of the world after that. With the rising price of municipal water and drought restrictions now facing much of the United States during the summer months, more and more homeowners in our own modern society are turning to the harvesting of rainwater to save money and protect this precious natural resource.



Visit <http://www.cleanairgardening.com/rainbarrels.html> and <http://www.gardeners.com> for a great selection of rain harvesting options.

It is a common belief in many parts of the world that water is an infinite resource to exploit as needed, but as the saying goes, "you don't know the value of water until the well is running dry." This is especially true in arid parts of the U.S. where most of the municipal water comes from overstressed underground aquifers. Whereas rainwater is considered a renewable natural resource, many aquifers are being "mined," that is, communities are drawing out more water than the aquifer naturally receives to recharge it.

As drought and aquifer mining begin to call attention to an increasing water crisis, people are seeking ways minimize impact on their municipal water supplies. Rain barrels can be part of the solution. Just look outside your window the next time it rains and imagine all the water that's running down your driveway being put to beneficial use in your home and garden!

## The Freshwater Facts

To illustrate how important and how limited a resource freshwater is in our world, consider the following. More than 80 percent of the Earth's surface is covered by water, but only 2.5% of this supply is considered fresh water. The rest is found in the form of salt water in the oceans. Of the fresh water that exists, most is locked up in glaciers and ice caps. Water can also be found in the form of clouds and humidity in the soil. That leaves us 3/10 of 1 percent found in the form of lakes, rivers and streams. Unfortunately, much of this small amount of freshwater is in danger of drying up through desertification or becoming so contaminated that it cannot be used for human consumption. Changing our habits of water use can help to abate this growing problem.

## Why Harvest Rainwater with Rain Barrels?

Besides helping the environment, an obvious reason for harvesting rainwater is to save money. Depending on the size of your house and the amount of rainfall in your area, you can collect a substantial amount of rainwater with a simple system. This extra water can have a significant

impact on your water bill. The use of rainwater combined with the domestic use of grey water can further increase your savings. Even if you live in a rural area and have your own well, the fact that rainwater is a naturally soft water may be enough to justify harvesting rainwater. (Keep reading for information on how to calculate the potential volume of rainwater you can collect.)

Rainwater stored in rain barrels has many uses. Some people find it mostly useful for watering their landscapes and gardens. Others find uses within the house as well. Rainwater can also be used for drinking but requires special treatment with a filtration system. Note that many cities require the filtration system for drinking water to be certified and the water to be tested on a regular basis. You do not need a filtration system for landscape uses. You can use it directly from your rain barrel on your garden.

If you're harvesting rainwater with rain barrels to use for watering your landscaping, the rainwater can help to improve the health of your gardens, lawns, and trees. Rain is a naturally soft water and devoid of minerals, chlorine, fluoride, and other chemicals. For this reason, plants respond very well to rainwater. After all, it's what plants in the wild thrive on!

### **Rainwater from Rain Barrels Makes Your Garden Smile**

Since the rain water is usually collected from the roofs of houses, it picks up very little contamination when it falls. You'll of course want to keep your roof clean of debris and potential contaminants to maximize purity. The material your roof is made of is also important in how much contamination the water will carry (see Safe Rainwater Harvesting Catchments). The chemicals and hard water from many of our municipal water systems can produce an imbalance in the soil of your garden. Chemical fertilizers, fungicides, pesticides, and drought can also disrupt the balance and harmony of the soil. This imbalance causes trees and plants to weaken and makes them more susceptible to disease.

Trees and plants have an efficient immune system that allows them to fend off diseases and other invaders as long as they have a healthy soil environment and aren't stressed by other factors such as drought. Trees and plants rely on fungus, bacteria, and nematodes to help them absorb the minerals and nutrients they need. Trees and plants depend on a fungal root system called **mycorrhizae**. Mycorrhizae attaches itself to tree and plant root hairs and extends the root hair system.

Mycorrhizae uses some of the plant's energy, but provides the plant with minerals it can't otherwise absorb. In healthy soil, the mycorrhizae of one tree connects with mycorrhizae of other similar trees. When you look at your garden, visualize it as a vast interconnected community of trees, plants and tiny critters that live in the soil, all interacting and affecting each other. Thus, the type of water you use in your garden will affect the health of this intricate community.

And speaking of community, one of the best reasons to start harvesting rainwater with rain barrels is that if you teach and encourage others to do the same, you will help to spread the culture of rainwater collection and in turn help your larger community and the environment. It is always important to remember that every living thing on the planet needs water to survive so we as humans must expand our idea of community to the plants and animals that surround us.



## ***Types of Rainwater Harvesting Systems***

There are many possible configurations and degrees of complexity to a rainwater catchment system. Costs vary considerably as well. You can spend anywhere from a few dollars to thousands of dollars. Your best bet is to review the options available on the market to find out what's in your price range and what's a realistic set-up for your home.

Perhaps the simplest use of rainwater if you are on a budget or have space restrictions is to put a rain barrel under one of the gutter downspouts and use the water on sensitive indoor plants. The plants will appreciate the soft water. The barrel should always be covered between uses.

A slightly more sophisticated system might be to use several barrels connected together near the bottom with pvc pipes or hose. A small pump can be used in one of the barrels to pump the water to your garden. In this case, all the barrels will drain simultaneously.

Bigger and more complex systems may use gravity to feed water from gutters to a larger cistern, which pumps water to the landscape. Some online gardening sites sell cisterns and other more complex rainwater harvesting equipment.

Whatever you decide, all systems should use covered barrels or cisterns that keep the water from accumulating leaves and other contaminants. They should also have some kind of filter to keep out silt and leaves. Filters can range from a funnel with mesh at the bottom that is covered by gravel, to a rainwater washing apparatus.

## **Safe Rainwater Harvesting Catchments**

Any catchment area will pick up some contamination from leaves, bird droppings, dust, and other natural causes. This water is fine for watering your garden, but it will need a good filtering system before you can be sure it is safe to drink. Some roofs, such as old tar and gravel or old asbestos shingle roofs create too much contamination for rainwater harvesting. Treated cedar shakes are also not recommended for water harvesting.

The type of gutter system you have is also important, as many may have lead soldering or lead-based paints. Additionally, if you live in an area that produces heavy industrial pollution, your rainwater itself may contain some undesirable contaminants. Talk to your local municipal government about the issue of environmental contaminants in your area that may affect rainwater quality.

## **Other Safety and Maintenance Concerns**

Water stored in any kind of container represents a risk for small children. Children can drown in as little just a few inches water. Additionally, animals both wild and domestic may become trapped and drown

in your barrels if uncovered. Therefore, you should never use an open container for rainwater collection. Make sure you have some way to cover the barrel with a screen or a top. Standing water is also where mosquitoes breed best. As the West Nile virus and other diseases are important concerns these days, you'll need to take appropriate measures to deter mosquitoes from breeding in your rain barrels. It only takes about ten days for mosquitoes to breed, so you should ideally empty the water in less than ten days. You should also use a fine screen over the top of the barrel so the mosquitoes can't reach the water in the first place.

The type of barrel you use is also important. Make sure it's a food-grade container that was made to hold liquid. You cannot cut corners and simply use a trashcan because a common trashcan will not withstand the pressure of the water for long. The location of your rain barrel is also important. Make sure you place it on level and stable ground. When your rain barrel is at maximum capacity, it will weigh quite a bit and tipping is a risk on un-level ground.

Depending on what part of the country you live in, we recommend disconnecting your rain barrels in the winter if temperatures in your area regularly reach freezing or below. Constant freezing and thawing of the water in your rain barrel may weaken the material or cause cracks. Store your barrels upside down in the winter to keep them clean for future use.

A final bit of advice for all rainwater catchment systems is to always monitor the rain barrels for overflow. If for example you leave for vacation for a week and haven't taken precautions to avoid the overflow of water, you may end up with damage to the foundation of your home or other related problems over time.