

# ***The Art of Catching Rain***

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Teaser: Are you ready to harvest some rain for your garden or flower beds? Read on to find out more about the benefits of rain barrels and how to get started!

Did you know that with just one inch of rain, over 600 gallons of water will fall on a 1,000 square foot roof? What if you could harvest some of that water and save it to put on your garden or landscape during dry days? Would you do it? This is a relatively easy thing to do using rain barrels. A rain barrel is a large container, often a reclaimed 55-gallon drum, that people position to capture rain from their roof. On average, over 40% of household water use during the summer goes to maintaining landscape and other outdoor water needs. By using rain barrels, you can reduce the volume of water you are using from municipal supply or from your well for watering. In addition, by trapping a portion of the water falling onto your roof, you are spreading out the water return to the system over time. Rain barrels help keep rain water out of storm and sewer pipes whose capacity can easily be overwhelmed during rain events causing flooding. They also serve to save that water for dry days and can be used for various outdoor water needs.

*Why is this important?*

During large rain events, rain falls onto every surface: houses, plants, ground, cars, roads, etc. If the rain falls on hard, impermeable surfaces, such as roads, driveways, or roofs, the water immediately runs off picking up chemicals, other pollutants and litter. All of this then flows directly into nearby waterbodies with little to no filtration. In some locations, including New Haven, CT, the storm sewer and waste sewers pipes are combined. This means that in large rain storms, not only is the stormwater runoff collecting contaminants on the street and other hard surfaces, but it may then overwhelm the waste sewer system, resulting in a release of untreated sewage into local waterways. *Rain barrels are one "source control" that reduces the volume of rain that enters the combined sewer system thereby reducing the risk of sewage releases into our rivers and harbor. Other source controls include rain gardens and bioswales.*

When rain falls onto permeable surfaces like grass, plants, or soil, the rain soaks in, is taken up by the roots of plants, or filters through the soil, spreading in all directions. As it slowly moves through the soil, any contaminants that may have been in the water, are held, or sequestered, by the soil, preventing the pollution from entering in large bodies of water like lakes, rivers, or estuaries. It also may function to recharge groundwater. As an example, New Haven, CT has very sandy soil that allows rain water to easily soak into the ground, replenishing groundwater that has been depleted over the years from pumping for private use. As sea level rises the pressure of salt water encroaches on underground infrastructures that were not designed to handle salt water. This can cause rusting and increased

maintenance costs. By increasing the fresh water supplies underground, the encroaching salt water is kept at bay.

By using rain barrels you can increase the amount of water that moves through permeable surfaces, increasing the time a portion of the water falling on your property spends in the soil before it is released into a local waterway, cleaning that water, saving money on the water you are buying from your municipality, and putting that water to good use. A win for you as a homeowner and a win for the environment. The more regular folks know about the challenges associated with stormwater runoff and the things they can do to reduce their own impacts, the more they will become stewards for their own water resources.

<https://www.epa.gov/npdes/stormwater-discharges-municipal-sources>

The New Haven-Quinnipiac Bioregional Group provides free rain barrels to folks in the New Haven, CT region. They do so by using repurposed Coca-Cola syrup drums, a project the local Coca-Cola bottler has been involved with since 2008. The group of dedicated volunteers works in partnership with the Greater New Haven Water Pollution Control Authority (GNHWPCA). Lynne Bonnett says, "Rain barrel give-outs allow us to inform residents about the volume of water that comes down with a one inch rain event and how best to handle it - hopefully, by disconnecting their downspout and directing the overflow to open ground where it can soak in with very obvious environmental benefits."

The current worldwide pandemic has limited the Bioregional Group's ability to provide in-person workshops at the same time that it has increased homeowners' desire to plant gardens and decrease their environmental footprint. Lynne says that this year "We started informing residents about free rain barrels a few weeks ago (May 2020). We may just be giving the barrel with its kit (of hardware from the GNHWPCA) while doing a show and tell about how to install it. However, we may actually drill the holes in the barrel to accommodate inflows, outflows and spigots." Since the beginning of the 2020 gardening season in Connecticut, the group has already given out over 25 rain barrels, and in the past two years they have given out more than 100 rain barrels.

*Some people may not want to install rain barrels because a 55-gallon plastic drum isn't all that pretty in their yard. However, the non-profit Lots of Fish (LOF) has created *The Art of Catching Rain* project, which helps people beautify rain barrels that they install on their property. Lots of Fish founder JoAnn Moran says "By making the barrels appealing to look at, we are making people want them on their property. Many property owners who wouldn't otherwise consider harvesting rain water ask for our barrels because they add color and interest to an otherwise ugly piece of equipment."*

Painting a rain barrel is relatively simple, and LOF conducts workshops to teach people how to do it. But Joann says anyone can do it themselves. If you want to beautify your rain barrel, start by lightly sanding the barrel to break up the slippery coating on the outside. Next, cover the whole outside of the barrel with primer. Then draw your design on the outside of the barrel. It can be as complex or as simple as you like. Then begin painting. Make sure to use either artist acrylic paint or exterior house paint for the

best longevity. After you are satisfied, use two coats of a clear sealant to ensure your artwork lasts as long as possible. Once the paint is dry, you can install the barrel on your property.

To add to the excitement, LOF is diving into GIS and creating an interactive web map that will allow the public to track where beautified Runoff Art projects are installed in and around Connecticut. This web map will be a one-stop-shop to see where storm drains have been painted and which drains are able to be reserved by communities to paint, as well as showcasing environmental organizations with similar interests as LOF and community efforts to reduce stormwater pollution (including bioswales, rain gardens, and murals). The map will also include rain barrels on public properties or at businesses. By using GIS map combined with the QR codes painted on each barrel, folks will be able to learn more about stormwater runoff, the group that contributed, and the idea behind the art itself.

Frank Panzarella, of the New Haven Bioregional group host is hosting periodic workshops in his backyard for learning about rain barrel installation and even painting the barrels. Obviously, groups must be small with the pandemic. However, Frank was so excited about rain barrels, he wrote a song about them! Listen here!

<https://www.youtube.com/watch?v=xOiZ3xPF1oY&feature=youtu.be>

Artfully painted rain barrels are a simple, but effective, tool for beautifying your outdoor space, providing water for gardening or outdoor activities, and redirecting rain water that could otherwise pollute major waterways. Rain barrels, a win for your garden, a win for your property, and a win for the environment.

Many regions, like New Haven, CT have programs that build simple rain barrels from 55-gallon drum they acquire in bulk. However, if you want to make your own rain barrel from an empty drum, there are lots of instructions on how to do this online.

Here are a few options: <https://www.instructables.com/id/How-to-make-a-rain-barrel-1/>

<https://www.diynetwork.com/how-to/outdoors/structures/how-to-create-a-rain-barrel>

There are several items you should consider when installing a rain barrel on your property. Here is a quick list along with a few additional thoughts.

1. The best barrels for this type of project are 55-gallon drums that were originally used to hold food products such as syrup for making soda, pickles, or other edibles. Do not use barrels that have ever contained petrochemicals, herbicides, or pesticides.
2. Rain barrels are most effective paired with gutters. If you have gutters, you want to position the barrel in line with one of the downspouts to the degree possible.
3. Choose a flat location for your rain barrel. A 55-gallon drum full of water weighs almost 500 pounds. You do not want that thing falling over.

4. Elevate the barrel using at least two layers of cinder blocks. Whether you plan to water using a watering can, drip or soak irrigation, the only way water is coming out of the barrel is through gravity, so you want sufficient vertical distance to provide some pressure.
5. Position the spigot at least 6 inches above the bottom of the barrel. Sediment will accumulate in the bottom. You don't want it to clog the spigot.
6. Add an overflow mechanism (PVC pipe or piece of drain pipe) near the top. Rain storms will quickly fill the barrel and you want to direct the excess away from the foundation of your house. The overflow should be at least half of the size of the inflow; in the case of a standard 2x3" downspout the overflow should be at least 2 " in diameter to avoid potential damage to your foundation or erosion from an overflowing rain barrel during a rain event.  
<https://www.portlandoregon.gov/bes/article/378190>
7. Make sure that there is a screen covering the top of the barrel to keep out debris and insects. Even so, it is a good idea to periodically add a mosquito dunk to prevent mosquito breeding.
8. Drain down the barrel periodically to keep the water as fresh as possible. The easiest way to do this is to incorporate a drip-irrigation system (more on that later).
9. If you live in a location with freezing winters (like Connecticut), make sure you empty the barrel, or even bring it indoors, before winter. A full rain barrel will freeze, expand, and crack, making it useless the next year.
10. The water in a rain barrel should never be used for drinking or washing dishes or clothing.
11. There are advanced techniques for reducing pollution from rooftops entering your rain barrel described in Laura Allen's book, The Water-Wise Home as well as many other helpful ideas.
12. Coca Cola produced a video showing conversion of their syrup barrels using the kits that GNHWPCA supplies to the bioregional group. You can watch it on Youtube. The kit is a partial diversion mechanism that does not require an overflow..  
[https://www.youtube.com/watch?v=TE2c4t9\\_asA](https://www.youtube.com/watch?v=TE2c4t9_asA).

There is still some debate about whether it is ok to use the water coming out of your rain barrel for watering plants you will eat. Concerns include the growth of bacteria like *E. coli* in the barrel as well as roof contaminants. However, recent research has shown that as long as you practice safety, the risk should be very low. First, don't water directly onto leafy greens you will eat. If you are going to water these types of plants, make sure you are watering at the level of the soil. Second, always wash all vegetables before eating them. It has been found that zinc can build up in the soil to a level that could hurt your plants, but not to a level that could hurt you. As long as you are adding new compost each season, things should stay in balance. If you have more questions about safety, read about them here: <https://blog.extension.uconn.edu/tag/rain-barrel/#>

Incorporating micro-irrigation into your rain barrel/watering system is an easy way to make sure that your plants get water continuously, the barrel is being refreshed on a regular basis, and you aren't watering onto leafy greens you are going to be eating. The easiest method of doing this is to buy a no-pressure soaker hose. Attach it to the barrel and turn on the spigot when your garden needs water. Turn it off when the watering is done. You don't have to carry a watering can to your garden, and you don't

have to worry about pouring roof water over leafy plants. There are additions you can make to this system, including irrigation timers and other components. However, as a beginner, I would start here.

DIY Drip irrigation: <https://www.bluebarrelsystems.com/blog/gravity-feed-irrigate-rain-barrels/>

#### Resources and further reading

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

<https://www.reducerunoff.org/rain-barrels>

[https://www.americanrivers.org/threats-solutions/clean-water/stormwater-runoff/?gclid=Cj0KCQjwn7j2BRDrARIsAHJkxmW4Y2KkZxc84tLgU82T03fokVcVA\\_Z2dtCw5XIYt4JsE7Omz9w\\_lwMaAoaTEALw\\_wcB](https://www.americanrivers.org/threats-solutions/clean-water/stormwater-runoff/?gclid=Cj0KCQjwn7j2BRDrARIsAHJkxmW4Y2KkZxc84tLgU82T03fokVcVA_Z2dtCw5XIYt4JsE7Omz9w_lwMaAoaTEALw_wcB)