

A HOME OWNER'S GUIDE TO

RAIN BARRELS

HOW TO CONSTRUCT
AND MAINTAIN RAIN
BARRELS FOR YOUR
RESIDENCE



COBB COUNTY
WATER SYSTEM

ABOUT US

Cobb's Watershed Stewardship Program (WSP) provides free ecological education programs for classrooms, community groups and businesses within Cobb County. These hands-on programs teach community members about the sources and impacts of water pollution and what individuals can do to protect rivers, lakes, and streams. We also coordinate community service projects, facilitate teacher workshops and create educational resources for checkout and distribution.

WSP is housed in the Water Quality Laboratory of the Cobb County Water system in the Office of Environmental Compliance. We work closely with staff from Cobb's Watershed Monitoring program and Stormwater Management Water Quality Unit to ensure our outreach education programs are accurate and fulfill the needs of the community.

Cobb County Watershed Stewardship Program

662 South Cobb Drive
Marietta, Georgia 30060
770.528.1482
www.cobbstreams.org



CONTENTS

1	Introduction
	What Is A Rain Barrel?
	How Are Rain Barrels Beneficial?
3	Getting Started
	Rain Barrel Placement
	How Much Water Can I Collect?
5	Materials And Equipment
7	Rain Barrel Construction
9	Connecting Serial Barrels
11	Decorating Your Rain Barrel
13	Rain Barrel Maintenance
14	Uses For Collected Water

INTRODUCTION



What Is A Rain Barrel?

Cisterns that hold rain water have been around for thousands of years. Although there are many types of storage cisterns commercially available, rain barrels offer homeowners an affordable do-it-yourself option. A typical rain barrel setup consists of a 55 gallon food grade drum that has been fitted with hardware to divert runoff from roofs. This stored water can be used to supplement natural rainfall and other sources of irrigation.

How Are Rain Barrels Beneficial?

In the summer, watering lawns and plants account for 40% of household water use – a large percentage, especially when Atlanta's historical struggle with water supply and demand is taken into account. While a single rain barrel may not provide enough water to sustain your entire yard, it can be a valuable supplement to your watering regimen. During a drought, it is recommended that trees take precedence with watering since they are the most expensive plants to remove or maintain. Planter beds, container gardens, and indoor potted plants can also easily be sustained with water from your barrel.

Using collected rainwater rather than treated potable water to irrigate your landscape saves money and helps protect the environment. Diverting water from impervious surfaces such as rooftops reduces the flow of water into stormdrains. Stormdrains lead directly into creeks and streams. There are two major water quality issues to consider. First, the sudden influx of water from a heavy rain event can cause scouring and bank erosion. Second, urban runoff picks up non-point source pollutants and bacteria, which pollute our waterways. By collecting rainwater, the volume of water transported to our streams and the amount of potential pollutants are reduced. The collected water can then be used to sustain plants during dry conditions.



GETTING STARTED

Rain Barrel Placement

Before constructing your rain barrel, you should determine where it will be placed. It should be placed in an area that is convenient for watering and easily accessible. This can affect where your spigot and overflow holes will be drilled. For safety, the ground under your barrel should be firm and level. You can create a platform for your barrel by stacking cinder blocks or building one out of wood or other materials. Raising the elevation of your barrel will increase the water pressure and also provide clearance for attaching a hose or filling water can. However, a 55-gallon drum will weigh almost 500 lbs. when full. If you have children or pets and are concerned that the barrel could tip over, you can strap it to a nearby wall or other stable surface. If the barrel is placed on a level and stable platform, tipping should not be a problem.

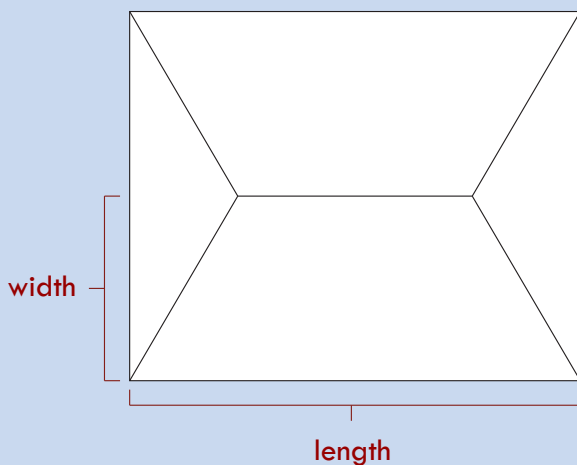


Make sure that any water that overflows out of your barrel will not run against the foundation of your home. Also, be aware of the aesthetics of your barrel. Often, it is possible to hide the barrel behind existing shrubs or trees so that they are less visible.

How Much Water Can I Collect?

Although any impervious surface can be used as a catchment area, roofs are the most common and adaptable. The slope of your roof and placement of your existing gutters allows for efficient transport for rainwater into your barrel, with little expense. Even a light rainfall yields a surprising amount of water flowing into your gutters.

First, determine which portions of your roof drain into the gutter downspouts where you will be placing your barrel. Measure the area of this portion of your roof. Generally, you can collect about half a gallon of water per square inch during a 1-inch rainfall. For example, a 2,000 square foot roof can collect about 1000 gallons of water during a 1-inch rain. Even if your rain barrel is only collecting from a small portion of your roof, it is still a substantial amount of water.



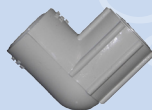
MATERIALS & EQUIPMENT



$\frac{5}{8}$ " Paddle Bit
(optional)



#1 or #2
Rubber Plug
(optional)



40° - 90°
PVC Elbow



$\frac{7}{8}$ " Paddle Bit



$\frac{3}{4}$ " Flat
Steel Washer



#12 O-Ring



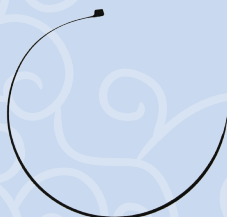
6" Round Plastic
Drain Cover



Long Handled Channel Lock



$\frac{1}{2}$ " PVC
Sink Faucet



24" Zip Tie



Mesh Screen



Downspout Extension Elbow



55 Gallon Food Grade Drum

Available at:
Advance Drum Service, Inc
1835 Dickerson Drive
Mableton, Georgia 30126
(404) 699-7048



Jig Saw
(with wide-toothed blade)



Drill

Other Materials:

Scissors
Permanent Marker

RAIN BARREL CONSTRUCTION

1. Trace a circle on the top of the barrel using the drain cover as a guide. Be sure to trace the drain cover on the flat portion of the barrel, not over the existing plugs. Place your circle a few inches away from the edge of the barrel so the jig saw will have room to cut.



2. Use the paddle bit to drill two holes on the inside of your circle. Use these holes as starting points for the jig saw to cut out the traced circle.



3. Cut a piece of mesh slightly larger than the drain cover. Secure the mesh screen to the drain cover with the zip tie. Insert the drain cover into the opening at the top of the barrel.

4. Using the $\frac{7}{8}$ " paddle bit, drill a hole for the faucet approximately 6 inches from the bottom of the barrel. Be sure to drill the hole on the flat portion of the barrel, at least 1 inch away from the raised band.



5. Place the steel washer and O-ring over the threads of the faucet. Insert the faucet into the hole at the bottom of the barrel.



6. Screw the plastic PVC elbow onto the assembly from the inside of the barrel using the channel lock.



7. Cut the gutter downspout just above the rain barrel. Attach the downspout extension elbow to the downspout and position it so that the opening rests against the drain cover.



Optional Steps:

- Drill an overflow hole near the top of the barrel facing away from your home. Use caulk to glue a piece of mesh over the hole to prevent mosquitoes and other insects from entering.
- Use the $\frac{5}{8}$ " paddle bit to drill a hole near the bottom of the barrel. Plug the hole with a #1 or #2 rubber stopper. This will be helpful if you ever plan on completely emptying your barrel; however, the seal around the plug may leak.

CONNECTING SERIAL BARRELS

It is possible to connect two or more barrels to increase your storage capacity. Barrels connected at the top will not fill until the first barrel is full, which could cause an overflow during a heavy rain. Barrels that connect at the bottom will fill more evenly.



DECORATING YOUR RAIN BARREL

If you're not crazy about the aesthetic appeal of your rain barrel, you can paint it to match your house, or even turn it into a piece of art! You're only limited by your imagination. Painting rain barrels is a great activity for children and can introduce them to important concepts about water quality and conservation. It also has the added benefit of protecting the surface of the barrel from breaking down due to the harsh effects of the sun.

You can use any type of paint on your rain barrel, but if you're using spray paint, one formulated for plastic application will work best. Although one can of spray paint will cover your barrel, a second can will give it a more "finished" look. Darker colors also require more paint. For a longer lasting paint job, the barrel should be primed first to help the paint adhere to the surface. After you've painted your barrel, it is a good idea to apply one or two coats of polyurethane to protect it.



To prime your barrel (optional):

Thoroughly clean the exterior surface with a 1:1 vinegar and water solution or an ammonia based solvent.

Using a fine to medium grit sandpaper, “rough up” the surface of the plastic. This will help the paint adhere. Use a dry cloth to remove any plastic shavings.

Apply one coat of outdoor primer. You can tint the primer to match the final color of the barrel. Allow the primer to dry before painting.

Now you can paint your barrel any way you like! Allow the paint to dry completely before applying polyurethane. Make sure that you work in a well ventilated area.



RAIN BARREL MAINTENANCE

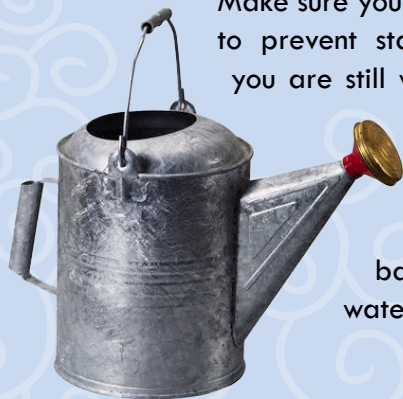
If your rain barrel is properly installed, it will require very little maintenance. Periodically inspect your barrel for cracks or debris buildup. Light colored barrels that are in direct sunlight may become brittle over time. They can be painted to make them last longer.

If there is debris in your barrel, a simple rinse will ensure good water flow. Also inspect your screen opening and your downspout pipes for dirt and leaves.

During cold weather, the barrel can be drained to prevent ice damage.

A common concern is that rain barrels are an ideal breeding spot for mosquitoes. Insects are attracted to standing water; however, if your drain cover is tightly fitted on your barrel, mosquitoes should not be able to get in. The screen over the drain cover will also ensure that egg laying females can't access the water. Small holes or gaps in your barrel can be filled with caulk or covered with window screen.

Make sure your guttering is sloped and free of debris to prevent standing water from accumulating. If you are still worried about mosquitoes, tablets are available at hardware and landscape supply stores that will prevent them from breeding. You can also add a tablespoon of cooking oil in your barrel to break the surface tension of the water, preventing egg laying.



USES FOR COLLECTED WATER

If you currently have a standard irrigation system, you can turn off the sprinkler zones that are in planter beds and use your stored rainwater instead. A standard hose will be able to screw onto the spigot on your rain barrel – however, the pressure may not be inadequate to operate a portable sprinkler system. In this case, you can invest in a low-volume submersible pump that can fit through the opening at the top of the barrel. A soaker hose or PVC pipe with holes punched will likely also require additional pressure. Of course, a hand held watering can is always an option.

Your rain barrel water can also be used to moisten your compost bin or to rinse gardening tools. Some people choose to wash their cars with collected rainwater. If you do, be sure to wash your car on your lawn so that the soapy runoff can infiltrate through the soil rather than wash directly into the stormdrain.

Rain barrel water is non-potable and should not in any way be connected to your in-house plumbing or used for drinking, bathing, pets, or recreation.



Cobb County Water System has created a how-to video outlining how to assemble your own rain barrel. This step-by-step guide will take you through the process.



COMPANION DVD

Sam Olens, Chairman

Helen Goreham, District One

Bob Ott District Two

Tim Lee, District Three

G. Woody Thompson, District Four

David Hankerson, County Manager

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