

# RAIN BARRELS



## General Information

### Summary

Rain barrels are designed to collect roof runoff. Essentially any watertight barrel can be set next to a building with a gutter downspout funneled into it to collect and store water that can later be used to water lawns and gardens. Manufactured barrels with lids and spigots are available through catalogues and hardware stores and are safe for households with children.

### Advantages

- Rain barrels are an inexpensive means of controlling rooftop runoff and can be easily employed by individual homeowners throughout a neighborhood. Many downspouts are connected directly to storm drains; connecting rooftop downspouts to rain barrels can reduce storm runoff discharges into sewers.
- Rain barrels are a good means of collecting and recycling rainwater for use on gardens and lawns, thus lowering water bills.
- Rain barrels are relatively unobtrusive and can be an aesthetically acceptable addition to gardens adjacent to houses.

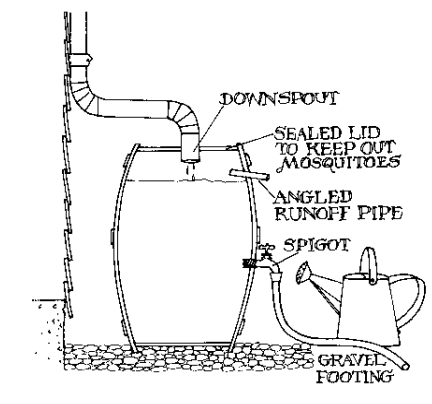
### Disadvantages

- Runoff mitigation for neighborhoods is minimal unless used by multiple homeowners.
- Insect growth can be a problem if the barrel is not set up or managed properly.

### Conventional Alternatives

Normal downspouts and gutters connected to gutters and sewers.

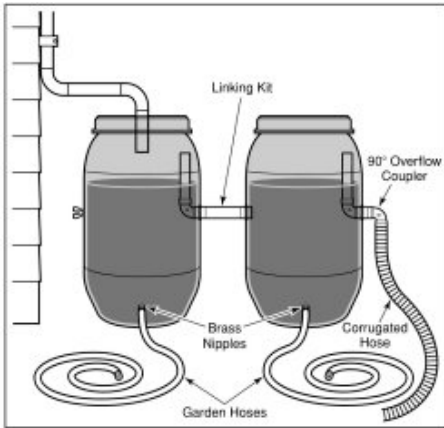
## Design Information



Average rain barrels are generally between 35 to 40 inches tall and 23 to 30 inches wide although smaller and larger ones can be found. On average they take up about 3 ft<sup>2</sup> (.27 m<sup>2</sup>) in area. Most commercially made rain barrels come with mosquito-proof lids and covers. A thin layer of cooking oil can also be added to the surface of the water to further discourage insects.

### Uses in combination with other techniques

Rain barrels can be used in combination with rain gardens, rain gutter retrofits, small swales and pervious paving to reduce the runoff from a home or small cluster of houses. They can also be connected to dry wells, so that overflow is captured and infiltrated into the ground.



### Cost

Rain barrels cost from \$40 to \$260 depending on the size and manufacturer. A 75-gallon barrel with lid and spout can cost between \$100 to \$150. Designs are also available for individuals wishing to construct their own rain barrel at less cost.

### Runoff Reduction

The amount of runoff that rain barrels can prevent varies depending on the number of rain barrels a home installs, the size of the barrels, the amount of rainfall the area receives per year, and the roof surface area of the house.

In general, every inch of rain that falls on an impervious surface of 1000 square feet creates approximately 600 gallons of runoff. Roof surface area is equal to the total square area of the house plus the extension of the eaves.

A calculation for a 30 ft x 40 ft house with one-foot eaves on two sides would look like this:

$$(1+1+30) \times 40 = 1280 \text{ ft}^2$$

If 1 inch of rain over 1000 ft<sup>2</sup> creates 600 gallons, then 1280 ft<sup>2</sup> creates 768 gallons. Rain barrel capacity ranges from 20 to 80 gallons. Having one or two rain barrels in place and using the water in them can reduce stormwater runoff, but will not manage all runoff, particularly during larger rainfalls. However, rain barrels work very well to detain runoff from small storms and when used in combination with other stormwater mitigation methods, they can help slow water flow from the house and provide free water for gardens and lawns.

## Specialized Information

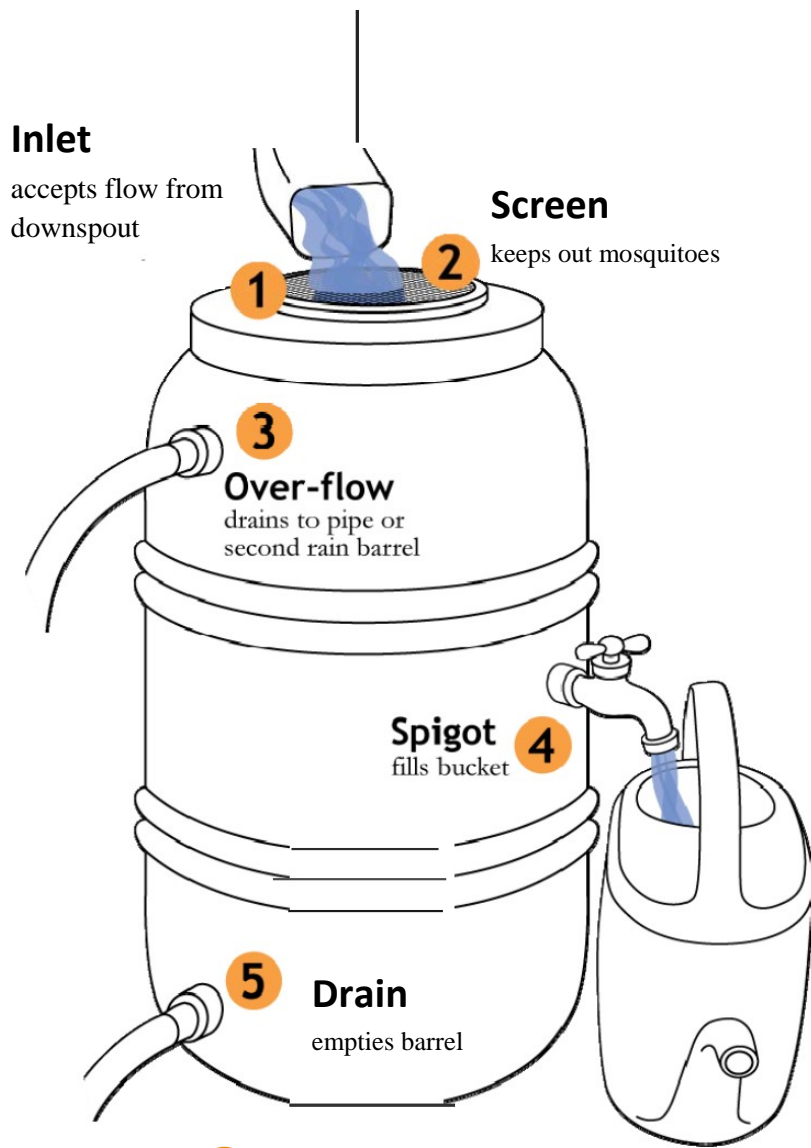
### Soils

Soil type has no effect on Rain Barrel use.

### Cold Climates

Some rain barrels are made to withstand cold climates. Others need to be drained and sometimes stored during cold weather. Check the product specifications to determine how a particular barrel handles cold weather.

For more information see <http://www.savegarretthill.com/Stormwater.html>



**Inlet**

accepts flow from  
downspout

**Screen**

keeps out mosquitoes

1

2

3

**Over-flow**  
drains to pipe or  
second rain barrel

**Spigot**  
fills bucket

4

5

**Drain**  
empties barrel

6

**Foundation**

level and sturdy to support  
weight of full barrel