



What happens to rain water around your home or commercial property? Ever have problems with excess drainage? Trouble with soil erosion? Want to improve water quality?

**A "Rain Garden"**  
may be your answer.

## Find Solutions That Work

Why not put nature to work for you? Create a "rain garden" to manage stormwater in many land-use settings, especially around homes and commercial properties. It's simple, beautiful and functional. Let's take a closer look.

This bio-retention area is much like a forest habitat. Just as a forest soaks up water and allows it to slowly penetrate the soil, a rain garden stores and filters rainwater.

It works like this: The rain garden intercepts stormwater runoff, full of pollutants from roofs, sidewalks, roads and parking lots. This drainage ponds in the depression of the garden. As the water soaks in, chemicals are available to the plant roots and attach to the garden's soil and mulch.

The end result – improved water quality and less surface sheet flow during rain events.



# Improving Water Quality through Stormwater Management

**For More Information**

For more information about VDOF services or programs, please contact your local Virginia Department of Forestry office or visit:

**[www.dof.virginia.gov](http://www.dof.virginia.gov)**

**Western Region Office, Salem:**  
Phone: (540) 387-5461

**Central Region Office, Charlottesville:**  
Phone: (434) 977-5193

**Eastern Region Office, Providence Forge:**  
Phone: (804) 966-5092



**Virginia Department of Forestry**  
900 Natural Resources Drive, Suite 800  
Charlottesville, Virginia 22903  
Phone: (434) 977-6555  
**[www.dof.virginia.gov](http://www.dof.virginia.gov)**

VDOF P00124; 05/2012

This institution is an equal opportunity provider.



# RAIN GARDENS

*A Landscape Tool to Improve  
Water Quality*



Virginia Department of Forestry  
[www.dof.virginia.gov](http://www.dof.virginia.gov)

## Experience the Benefits Each Day

Thanks to a strategically placed rain garden that is designed well, drainage from roofs, gutters and pavement is captured, eliminating soil erosion.

The garden also allows the water to pond and percolate through the soil mixture, entering the water cycle through "groundwater recharge," which is much better than entering as sheet flow.

Through the rain garden process, plants receive nutrients from ponding storm water. This keeps them healthy.

Vegetation tolerant of flooding and drought help capture the stormwater and also create an attractive setting.

Another advantage of the garden's plants is that they help provide a habitat for wildlife.

Plus, the volume and quality of water is better than when it enters the garden – whether it is absorbed in or leaves a rain garden.



## Plan Your Garden Carefully

Each rain garden site is unique. Keep in mind the topography, soil permeability, drainage basin, volume and velocity of water flow.

When determining the size of your garden and which plants to select, consider the light, temperature, moisture or water requirements, and size of the drainage area. The shape of the garden is not as important as the area available for water retention. So plan your garden carefully and consider all the variables when choosing your rain garden site.

## What's Involved

### Grass Buffer Strip

The surface of the grass buffer strip slows water as it enters the rain garden. Avoid a steep grade on the slope of the grass buffer/swale.

### Ponding Area

This is a depressional area where the water is stored, allowing it to evaporate or soak into the soil. The ponding depth of six inches provides for adequate surface storage of water, and must not pond in excess of four days (to avoid mosquito and insect breeding).

### Mulch/Organic Layer

The mulch plays a very important role in removing harmful chemicals. Shredded hardwood mulch is recommended because it allows for a greater surface area for absorption and resists flotation/washout.

### Planting Soil

A good soil mixture is leaf mulch (20%) blended into a sandy soil (50%) and topsoil (30%). The soil area of the rain garden provides a source of water and nutrients for the plants to grow. Clay particles absorb heavy metals, hydrocarbons and other pollutants.

## Plant Selection

Make sure your planting design includes species that tolerate extremes, as there will be very wet and very dry periods. Most riparian plant species will do well in rain gardens. Include plants that mimic forest habitat and have an aesthetic landscape value, such as flowers, berries, interesting leaves or bark. Groundcovers, perennial shrubs and trees are also key in your planting design.

## Two Natural Answers

Rain gardens perform many of the functions that forested riparian buffers perform to improve water quality. The following chart highlights the similarities of these systems.

Function	Riparian Buffer	Rain Garden
Absorb excess water	Spongy leaf litter layer	Mulch layer
Groundwater recharge	Water percolates through organic soils	Water ponds and percolates through porous soil mixture
Nutrient uptake	Plants remove nutrients from ponding storm water	Plants remove nutrients from ponding storm water
Vegetation	Species tolerant of frequent flooding	Species tolerant of flooding and drought
Water level zones	Stream edge to floodplain	Bottom of garden to edge of berm
Habitat opportunities	A diverse wildlife habitat corridor	Plants selected for wildlife habitat values