



MAINTAINING A BIORETENTION AREA

Taking Care of a Bioretention Area

Bioretention and associated pretreatment areas need simple routine maintenance to continue to work properly to control and treat stormwater runoff. Without this simple maintenance, the bioretention area may become clogged and allow water to pool on the surface, providing areas for mosquitos to breed. Routine maintenance can keep bioretention and pretreatment areas working properly and avoid expensive replacement costs.

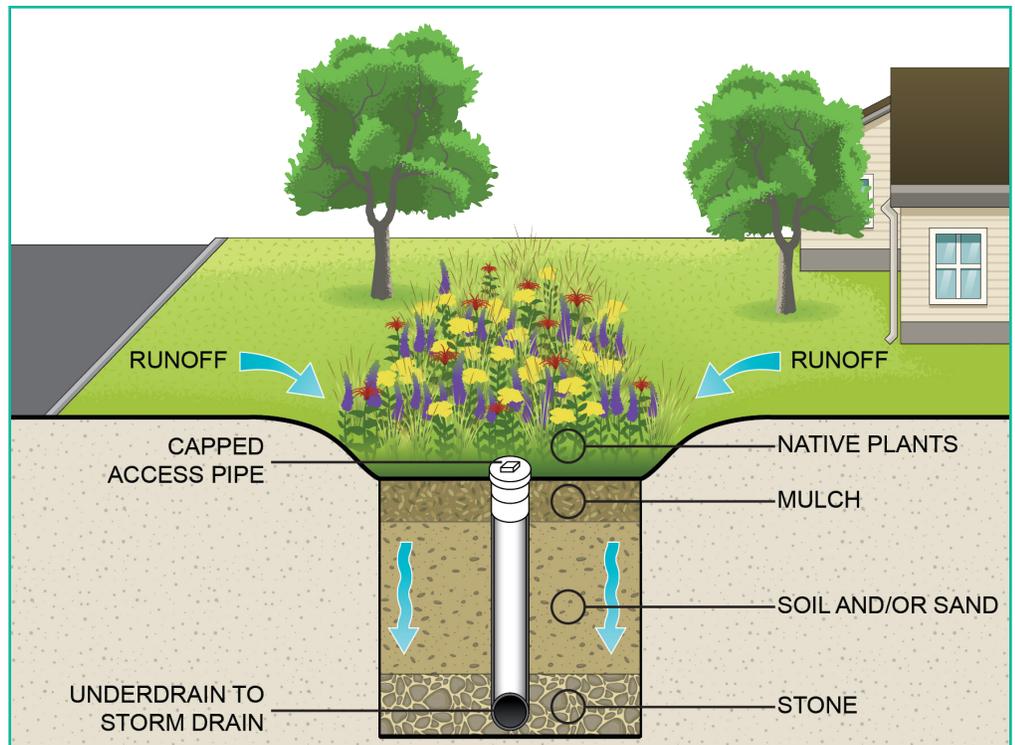
To Maintain Your Bioretention Area

- ✓ Water and prune plants and remove weeds as needed.
- ✓ Maintain 2 to 3 inches of mulch. Check after heavy rainstorms and replace every 2 to 3 years.
- ✓ Remove sediment, litter, and debris (including leaves and grass clippings) monthly.
- ✓ Eliminate fertilizer and pesticide use except for initial planting.

Stormwater runoff is rainfall that moves over paved or impervious surfaces, picking up pollutants like litter, oil, and animal waste along the way to the storm drain system. Stormwater management facilities help to remove pollutants from stormwater runoff before that water reaches the rivers and bays of Virginia Beach. This fact sheet provides information on a specific type of stormwater management facility and how to maintain it.

What is Bioretention?

Bioretention is a stormwater management technique designed to mimic the way water is filtered through plants and soil in natural environments. Vegetated depressions capture and slow the flow of stormwater, which allows the water to be taken up by plants and seep into the ground. This process helps filter out pollutants before the stormwater is released into waterways. Bioretention areas help control and treat stormwater runoff from small storms.



Cross-Section of a Bioretention Area

How Does Bioretention Work?

A bioretention area is a shallow landscaped depression consisting of several layers: plants, mulch, a special engineered soil mix (such as a layer of soil and/or sand), and a gravel bed. Some bioretention areas may contain a perforated pipe or “underdrain” in the gravel bed which filters stormwater into the soils below and to the storm drain system. Systems with an underdrain will have a capped pipe to access the drain.

To be most effective, bioretention areas need a pretreatment area which catches coarse sediment that would clog the bioretention area. Pretreatment may be a leaf screen on a home’s gutters, a grassy area between a sidewalk or driveway and the bioretention area, or a gravel area that slows the flow of water before it reaches the bioretention area.

When it rains, stormwater runoff flows over the pretreatment area toward the bioretention area and collects on top of the mulch and plant bed. Runoff may pool 6 to 12 inches above the mulch but then filters through the plant bed within 24 hours. The plants absorb some runoff and nutrients through their roots and the excess runoff soaks through the mulch and filter media layers to the gravel bed and underlying soils.

Troubleshooting

Problem	Likely cause	How to fix
Standing water 24 hours or more after a storm	Facility is clogged, or the underdrain is blocked.	Remove excess sediment or mulch in the bioretention area. If there is an underdrain, open the capped access pipe and flush out the pipe by running water through it from a hose.
Erosion or bare soil	Runoff is moving too fast or plants have died.	Stabilize the soil by replanting with native plants or using rocks to slow down water movement.
Dead or dying plants	Plants may not be appropriate for the conditions (light, water, climate) Plants may be smothered by weeds. Plants may need water if there has been a drought.	Use the right native plants for the light and moisture conditions. Remove weeds, including the roots. Water as needed during drought.
Heavy sediment accumulation	Variety of causes	Locate sediment source and work to correct it. Remove excess sediment in the bioretention area. Dispose of sediment in your trash; do not use it in gardens or compost.



Switchgrass



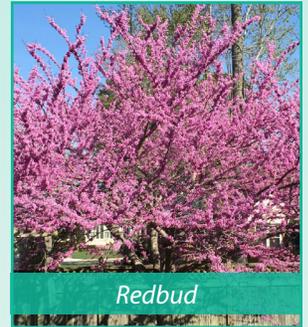
Marsh Marigold



Bee Balm



Indigo Bush



Redbud

Virginia Beach Stormwater Management Program

www.vbgov.com/stormwater-program

📞 757-385-4131

✉ VBstormwater@vbgov.com

Hampton Roads Planning District Commission

www.askhrgreen.org

📞 757-420-8300

✉ hrgreen@hrpdcva.gov

Virginia Beach Master Gardeners

www.vbmg.org

📞 757-385-8156

✉ vbmghelp@vbgov.com

Virginia Stormwater BMP Clearinghouse

www.swbmp.vwrrc.vt.edu

✉ BMPClearinghouse@deq.virginia.gov