

Benefits of Bioretention

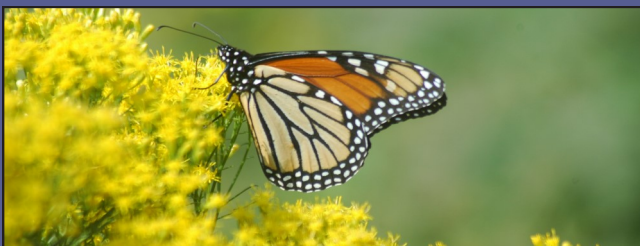
Bioretention combines physical and biological components to capture and treat stormwater before it reaches surface waters and the Chesapeake Bay.

Stormwater Runoff Reduction Benefits:

- Capturing and holding stormwater to allow time for pollutants to settle out;
- increasing infiltration to groundwater;
- reducing flash flooding; and
- reducing erosion of stream channels by slowing the velocity of water entering natural streams.

Biological and Habitat Benefits:

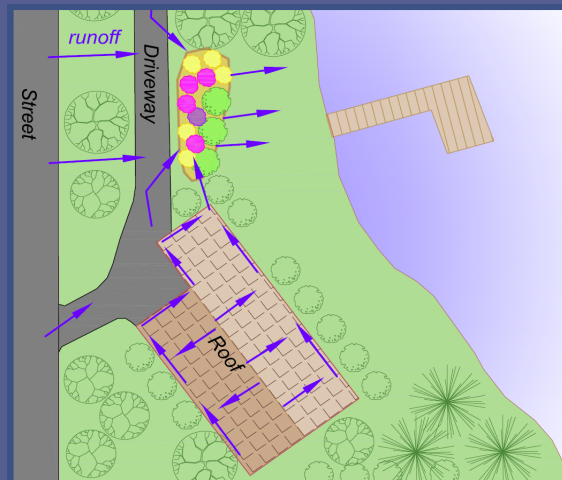
- Living plants take up excess nutrients such as Phosphorus and Nitrogen from fertilizers and animal waste runoff;
- the soil media in a Bioretention facility acts as a sponge, holding on to pollutants and filtering sediments;
- microbes living in soil can actually volatilize pollutants, such as hydrocarbons, rendering them harmless; and
- living plants provide habitat for wildlife.



A Bioretention facility planted with native plants is well adapted to local climate, periods of drought and saturation. It also provides the best habitat for local wildlife such as birds, butterflies, and beneficial insects.

Environmental Concern has years of experience designing and building Bioretentions and other Stormwater Best Management Practices to protect the Chesapeake Bay and our local waterways.

Directing runoff -



Arrows indicate runoff from the rooftop, driveway, and street. Runoff can be directed into a Bioretention where it is treated before reaching the Chesapeake Bay.

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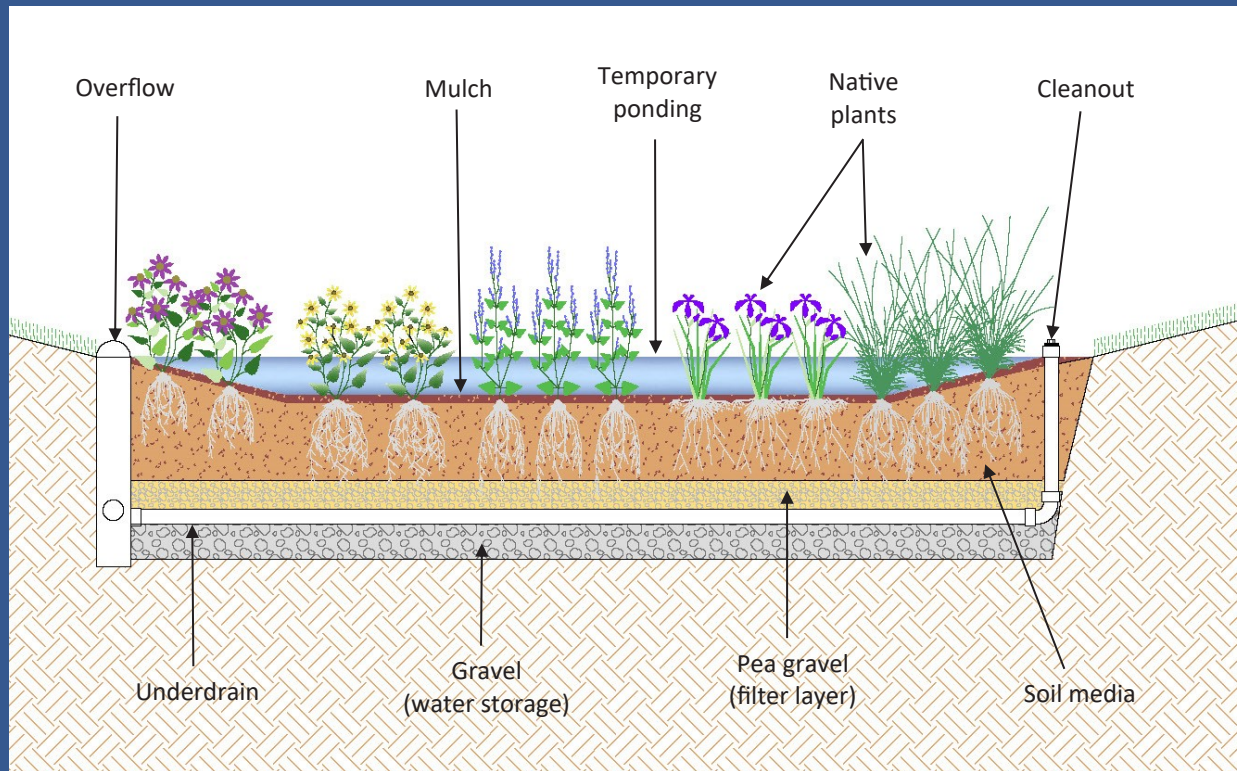
Bioretention

Restoring the Bay...

one wetland at a time.



FACT: 149 million pounds of nitrogen and 11.2 million pounds of phosphorous are carried into the Chesapeake Bay via stormwater runoff from fertilized lawns and agricultural lands causing algal blooms. The algae prevents sun from reaching plants, leading to low water oxygen levels and “Dead Zones” in the Chesapeake Bay.



Below the surface, a Bioretention consists of an excavated area with a layer of gravel, a layer of soil media, and a layer of mulch. This area is planted with species that can tolerate occasional flooding. A Bioretention may be tied into an existing storm drain to provide an exit for the filtered rainwater from larger rain events.

What is a Bioretention?

Rain gardens and Bioretentions are Stormwater Best Management Practices (BMPs) that utilize plants to filter sediment and treat runoff. Each stormwater BMP uses specific design criteria to manage runoff from the surrounding land.

The terms "Rain Garden" and "Bioretention" are sometimes used interchangeably. A Bioretention is designed for larger runoff areas and often utilize layers of filter media and gravel for added water storage; cleanout pipes and underdrains; and engineered overflow outlets. Rain Gardens are much simpler, usually created as a landscape depression with runoff directed from smaller catchment areas (e.g., residential sites).

Stormwater BMPs, installed in urban and residential areas throughout the watershed, help protect our waterways from nutrient and sediment pollution.

FACT: Stormwater pollution is the #1 source of water pollution in the United States.



Excavation



Gravel & Underdrain



Native Plants