RAIN GARDEN HISTORY: *HOW DID RAIN GARDENS GET STARTED?*

Mother Nature created our first rain gardens. Before humans settled on the land, rain was filtered through soils, roots, and plants in our native forests, wetlands, and meadows. The majority of the water that entered our surface waters was cool, clean groundwater.

As we built homes, roads and infrastructure, the natural water-cleaning systems were gradually removed. Our streams and rivers became increasingly degraded as water ran off the land instead of being taken up by plants, soaking into the soil, and filtered by soils and wetlands.

Rain gardens, or bioretention areas, were first conceived in 1990 by stormwater specialists in the state of Maryland. The goal was to design bioretention to mimic naturally occurring functions that existed in nature before humans began to alter the earth's surface features.

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RAIN GARDENS: *STORMWATER SOLUTIONS FOR ANY LOCATION*

URBAN: Rain gardens can be installed in parking islands instead of the traditional raised grass island which requires mowing.

RESIDENTIAL:

BUSINESS / SCHOOLS:

Stormwater
Best Management Practices Interpretive Trail

Nonpoint Source Pollution Reduction Strategy:

BIORETENTION AREA

RAIN GARDENS

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ABOUT THIS TRAIL

The Berks Conservation District Stormwater Best Management Practices Interpretive Trail was developed to educate visitors about stormwater management; nonpoint source pollution and its impacts; and, strategies for reducing water pollution that can be implemented at home, at work, or in the community.

What is nonpoint source pollution (NPS)? NPS pollution occurs when precipitation flows over lawns, parking lots, farm fields, city streets and forests picking up pollutants and carrying them into our streams, rivers and oceans.

Activities such as littering, oil leaks, lawn over-fertilization, and improper disposal of chemicals contribute to the contamination of our local waters. If left unchecked, these activities eventually increase the level of pollution content in our streams & waterways.

What can we each do? Strategies for managing stormwater and reducing nonpoint source pollution can be accomplished in many ways. Some of those ways are demonstrated on this trail and include Installation of Pervious Surfaces, Water Quality Units, Rain Gardens or Bioretention Areas, and Subsurface Infiltration Systems.

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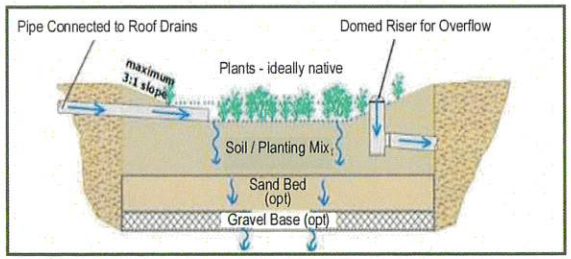
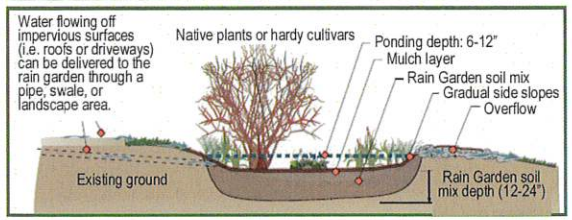
ON THE TRAIL: RAIN GARDENS

Rain Gardens are bioretention areas. These areas attempt to reproduce the physical, chemical and biological processes of the natural environment to create a more efficient, on site, water treatment area. The incorporation of plants, mulch and soil, introduces natural biological processes and provides two important functions: (i) water quantity (flood) controls; and (ii) improved water quality through removal of pollutants and nutrients associated with runoff. **Rain Gardens** gather and store runoff rainwater until it can infiltrate into the soils, evaporate or be used by plant uptake. Infiltration is important to restore groundwater recharge and maintain stream base flows.

Rain Gardens resemble a typical perennial garden in many ways. The garden bed is prepared or sometimes replaced to a depth of several feet in order to de-compact the soils and make the garden able to absorb water. Designed with deep-rooted flowers, grasses, trees and shrubs, a well designed rain garden is low maintenance and looks great.

Cross-sections of engineered rain gardens:





QUALITIES & BENEFITS OF RAIN GARDENS

Environmental Benefits:

- Installing a rain garden makes you part of stormwater pollution solution by absorbing and filtering rain that would otherwise run off your property and down the storm drain.
- Rain gardens are lovely landscaping features and create wildlife habitat.
- Rain gardens contribute to groundwater recharge.

Maintenance:

- Rain gardens are low maintenance.
- Rain gardens can save you money. They reduce the amount of lawn you have to maintain.

Application:

- A typical grassed lawn can be easily retrofitted with a beautifully landscaped Rain Garden.
- Rain gardens can be any size and placed in a variety of areas where rain water runoff can enter the garden area, as the site layout determines.

Take Note:

- Rain gardens have a ponding area, but they are not ponds. There is a bowl-shaped dip in the garden, which holds the rain while it soaks into the soil.
- Rain gardens often are planted with wetland plants, but they are not wetlands.
- Many of the plants in the garden are native to the region, and have extensive deep roots that help the garden absorb rain.