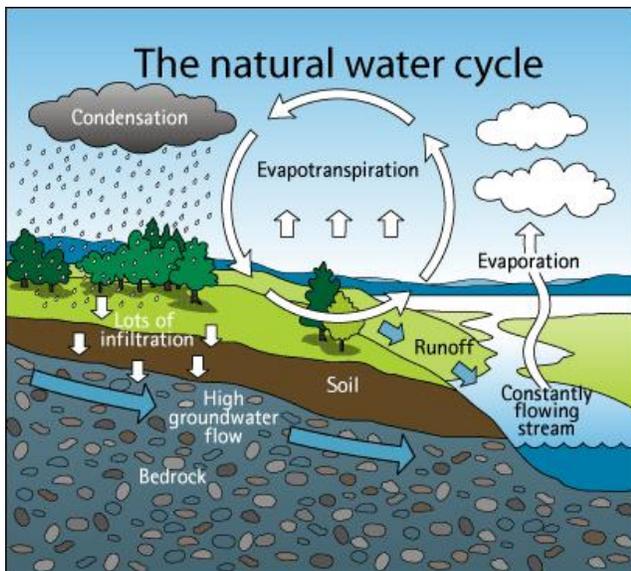


Low- Impact Demonstrations Fact Sheet



- ◆ **Non-point source pollution** is contamination stemming from many sources, accumulating to negatively impact stream quality. Non-point source pollutants can be discharged over a wide land area, from many different locations, and most find their way to a stream through stormwater.
- ◆ **Stormwater pollution** occurs when rain, snowmelt, or irrigation running off the land carries a variety of pollutants into local streams, either directly or through storm sewer systems. Stormwater pollution can increase our water costs and negatively impact wildlife, recreation, stream banks and storm sewer systems. It can lead to increased flooding, fish becoming inedible, the spread of pathogens and other risks to human health.
- ◆ **Infiltration** is the act of water slowly seeping down into the ground between rocks and soil particles, which supplies springs and wells. This naturally filters water and is what keeps our streams flowing.
- ◆ **Runoff** occurs when water cannot infiltrate the soil because it is blocked by hard surfaces like pavement, buildings or compacted soil. Stormwater runoff is what carries pollutants to our streams. Less runoff and more infiltration means better quality water and a more balanced water cycle.
- ◆ **Stormwater management** techniques like rain gardens and naturalized retention basins help to increase infiltration and also use plants to filter pollutants from runoff. We must protect our water resources, because although 75% of Earth is covered by water, only 1% of that is available as fresh water for human consumption.

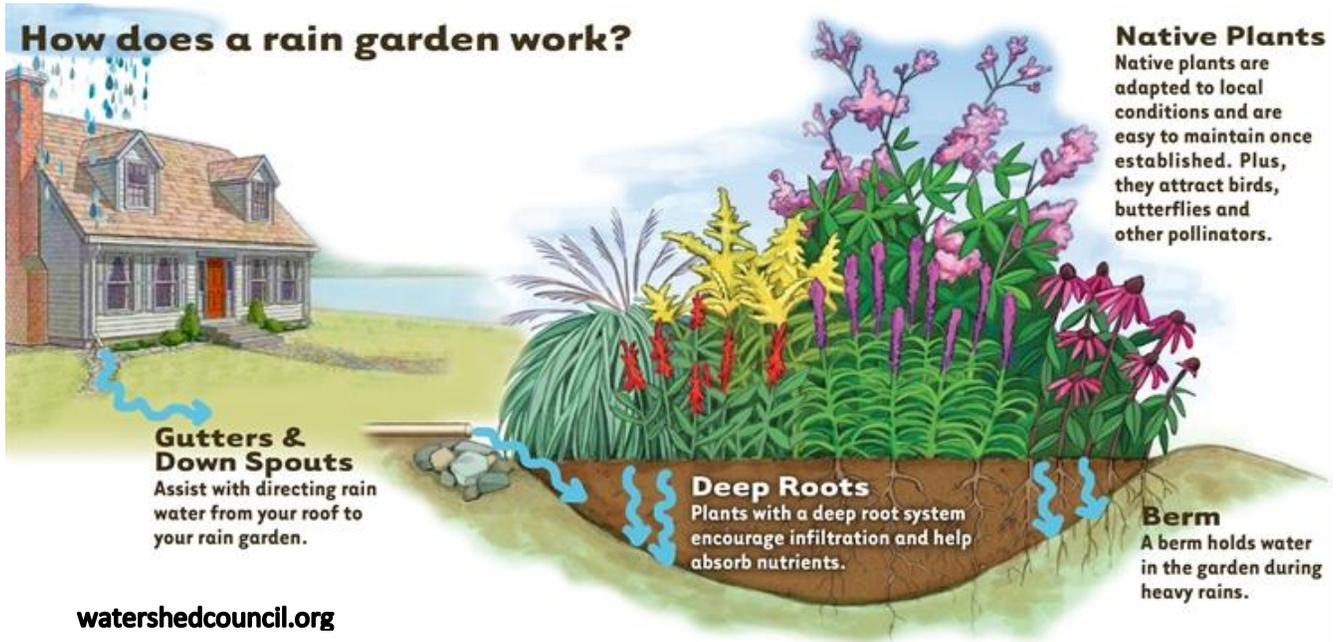


Types of Stormwater Pollution	Examples
Litter	cigarette butts, cans, tires, plastics
Chemicals	soaps, oil, fertilizers, pesticides, car fluids
Organics	grass, yard waste, pet waste, compost, leaky septic systems
Sediment	soil from bare earth, eroded stream banks, construction sites

Easy Rules for Preventing Pollution in Our Watershed

1. Plant native plants and control non-native invasive plants.
2. Avoid bare soil so it does not erode and run off into streams.
3. Recycle your yard waste and use it as mulch, or be sure to dispose of it properly.
4. Store soil, mulch, compost, yard waste and firewood outside of the stream corridor.
5. Reduce outdoor and household chemical use, and use proper disposal methods.
6. Avoid using pesticides.
7. Wash your car at a car wash and wash other things indoors at a sink.
8. Raise your mower height to at least 3 inches and never mow within 50 feet of a stream (riparian buffer zone).
9. Bag pet waste.
10. Check your vehicle for leaks and have any fixed.
11. Make sure your septic system is working properly.
12. Do not allow yard waste, litter, or anything but water to enter a storm drain or stream.

How does a rain garden work?



watershedcouncil.org

Rain Garden Resources

Rain Garden Designs

http://lowimpactdevelopment.org/raingarden_design/index.htm (Select Piedmont)

Rain Garden Manual of New Jersey from Rutgers

http://www.maine.gov/agriculture/pesticides/library/ppt/Master_Gardener/Rutgers_Rain_Garden_Manual.pdf

New Jersey Rain Garden Manual

http://www.npsnj.org/rain_garden_home.htm

Plant Selection

<http://www.iconservepa.org/plantsmart/plantsdatabase/index.htm>

<http://www.plantplaces.com/raingardenindex.shtml>

Typical Cost of Self-Installed Rain Garden/Bioswale: \$3 - \$4 per sq. ft. (including construction & plant purchase)

Nurseries for Native Plants

Behmerwald's Nursery www.behmerwald.com	4904 Garges Rd. Schwenksville, PA 19473	(610) 287-0480
Octoraro Native Plant Nursery http://www.octoraro.com	6126 Street Rd. Kirkwood, PA 17536	(717) 529-3160
GoNative Tree Farm http://www.gonativetrees.com	678 S Chiques Rd. Manheim, PA 17545	(717) 399-0195
New Moon Nursery www.newmoonnursery.com	975 Barretts Run Rd. Bridgeton, NJ 08302	(856) 455-4125
Edge of the Woods www.edgeofthewoodsnursery.com	2415 Pennsylvania 100 Orefield, PA 18069	(610) 395-2570

Easy Upgrade to your yard...Bioswales!

3.18 Vegetated Bioswale

	
<p>Description</p>	<p>Vegetated swales are basically a filter strip located along a gentle ditch known as a "swale". Drainage swales that are planted with native vegetation are commonly called bioswales. Swales have gently sloping sides and are used to convey the overland flow of stormwater down a subtle gradient. Swales accomplish many of the same functions provided by filter strips (slowing and cleaning water, encouraging infiltration, etc.), while also providing directed conveyance. This conveyance function is particularly important when managing concentrated flows and during severe storm events when stormwater needs to be directed to a destination, such as a wetland. Swales should be designed with native species for the reasons described above, and can be augmented with check dams and other techniques to maximize their effectiveness at managing stormwater.</p>
<p>Effectiveness</p>	<p>Vegetated bioswales are effective in slowing stormwater and reducing significant amounts of runoff. Removal of sediments and pollutants is high, ranging from 20 to 40 percent, but removal rates have been reported to exceed 80 percent (USEPA, 1999).</p>
<p>Advantages</p>	<ul style="list-style-type: none"> • Provides effective stormwater flood control by slowing down runoff and storing water, including water infiltration into the soil. • Improves water quality by filtering pollutants from stormwater (oils, greases, metals, and sediments that can be picked up from paved surfaces). • Can be used as a system by itself or in conjunction with other Best Management Practices. • Easy to plan and build. • Reduces erosion. • Flexible to incorporate existing natural features. • Preserves natural/native vegetation and provides habitat for wildlife.

Resources for Other Low-Impact Demonstration Projects

To boost the aesthetics of your yard, control flooding, and help improve local water quality consider one of these easy and low cost projects. The impact to your yard will be low but the benefits will be exponential!

Stormwater Management Guide for Northeast/Southeast Pennsylvania:

http://www.phillywatersheds.org/doc/Homeowners_Guide_Stormwater_Management.pdf

Determine How Much You Are Willing To Spend:

http://www.lowimpactdevelopment.org/raingarden_design/cost.htm

EPA Case Studies on Stormwater Projects:

<http://water.epa.gov/polwaste/green/#fact>

*****Best Site for Stormwater Management Demonstrations*****

<https://www.lincoln.ne.gov/city/pworks/watrshed/educate/bmpguide/pdf/bmpguide.pdf>