Rain Gardens, Rain Barrels & Me Oh My!

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To develop and implement effective, outcomes-based stormwater education and outreach programs to meet federal requirements and satisfy local environmental and economic needs.
What is a Watershed?
Impacts of Development
Impervious Cover

Natural Environment
- 40% evaporation
- 10% runoff
- 25% shallow infiltration
- 25% deep infiltration

Urban Environment
- 30% evaporation
- 55% runoff
- 10% shallow infiltration
- 5% deep infiltration

Image: Phila.gov/water
Common Pollutants & Problems

- **Bacteria:** animal waste, septic systems, sediment runoff
- **Chemicals:** pesticides, chlorine, detergents
- **Nutrients:** fertilizers, sediment, under-vegetated lawns
- **Litter:** cigarette butts, trash
- **Heavy Metals & Oil:** breaks, engines, oil leaks, tire wear
- **Natural Debris:** yard debris, grass clippings, leaves
- **Localized flooding** can result as well!
Two Solutions for Garden Lovers

#1
Harvest Rainwater
How it Works

Collection
Gutter system filters rain water to downspouts.

Transportation
Water moves along the drain system.

Storage
Rain barrels installed near roof tops or connected to a downspout store the water to be reused later (e.g., water non-edible gardens).
Key Benefits

- Protects water health
- Decreases potential for localized flooding issues
- Saves water for use between rain events and during droughts
- Saves money on utility bills
Common Types of Rain Barrels

**ADVANTAGES:**
- The screw top lid makes the top screen more secure than other options and can make the barrel more accessible for maintenance (depending on design).
- The black color will reduce algae growth in the barrel and also camouflages well.
- If you do not own a jigsaw, this barrel design will save you money on tools.

**ADVANTAGES:**
- Typically, less expensive and more readily available (in some parts of the state) than the screw top barrel.
- There is more flexibility in how you want to open the top of the barrel, and depending on your design and need, you can have the plastic surface mostly intact, which is stable and safe.

*Carolina Clear*
#2

Build a Rain Garden
What Is a Rain Garden?

A bowl-shaped, landscaped feature designed to capture stormwater runoff and allow the water to slowly infiltrate to the ground.

Benefits:

1. Help protect water resources by trapping sediment and filtering pollutants carried by stormwater.
2. Reduce localized flooding events.
3. Provide a habitat for native species (e.g., birds, bees).
4. Attractive feature for properties.
5. Education.
**Rain Gardens**
Green Solutions to Stormwater Pollution

**Stormwater** is water that originates from rain events. Stormwater that does not soak into the ground becomes surface runoff and flows to nearby ditches, storm drains and waterways. Stormwater picks up pollution from the landscape, but does not go to a treatment plant.

**Rain Gardens** are landscape depressions that receive stormwater runoff and improve water quality before it reaches ditches, storm drains and waterways. These gardens have several benefits:
- **Store and Absorb Water** that might otherwise contribute to flooding
- Provide habitat
- Beautify the landscape
- Naturally remove most pollutants:
  - Plants and soil trap metals and sediment
  - Plants use nutrients
  - Soil microbes break down pathogens, like bacteria

**How do rain gardens work?**

1. **Rainwater and stormwater collect in the depressed garden bed**

2. **Plants absorb water**

3. **Water filters through soil, replenishing our groundwater supply**

4. **Any water that does not soak in exits the rain garden cleaner**

5. **Plants grow, providing beauty and habitat in your yard**

**Will a rain garden work on my property?**
Rain gardens can be placed on almost any property that drains well or where soil can be amended. More guidance is available in the South Carolina Rain Garden Manual for Homeowners.
Installation General Overview

- **Site Selection:** Area where rain water typically flows (often installed down slope of the downspout and at least 10 feet away from the home / building).

- **Garden Sizing:** Dependent on the area that runs off into the garden, volume of water it temporarily stored, and soil type. The Center for Watershed Protection recommends the garden area to be 20-30% of drainage area directed to the garden.

- **Site Preparation:** Sandy loam / loamy sand is the recommended mix for a permeability rate of 1-6 inches per hour.

- **Plant:** The fun part! Full - partial sun areas will provide more plant options.

- **Maintenance:** Drainage, sediment erosion, debris accumulation, weeds, plant care.
Schools Build Them Too!
Helpful Resources

• Clemson Extension – Rain as a Resource
  www.clemson.edu/extension/carolinayards/yard-actions/rain-resource.html

• The Carolina Rain Garden Initiative
  www.clemson.edu/extension/raingarden/index.html

• South Carolina Native Plant Society
  www.scnps.org

• USDA PLANTS Database
  http://plants.usda.gov
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