Rain Barrels and Rain Gardens: Getting Down to Business

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What is Stormwater Runoff?



Photos from Kelly Collins, CWP



Photo courtesy of CWP, Kelly Collins



Water Quality in the Coastal **Bays is Declining**

21-40%

poor

0-20%

very poor

no data

ncomplete

What do the scores mean?

61-80%

good



Graphic source: MD Coastal Bays Program 2018 Report Card

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81-100%

very good



Images Courtesy of Google





Rain Barrels



- Availability
- Purpose
- Installation
- Use
- Maintenance

Photos: cbtrust.org; hayneedle.com



Rain Barrels

Availability

- Hardware stores
- Home & Garden



Purpose

- Conserve Water
- Prevent Pollution





Two Basic Types





<u>https://www.therainbarreldepot.com/earthminded-set-</u> <u>45-gallon-rain-station-barrel-wooden-stand-granite/</u> UM College Park • UM Eastern Shore



Elevate and Level the Barrel



Place in an Accessible Area







Rain Barrels

Use

- Work best when empty
- During rain event, keep spigot closed
- Between rain events:
 - Water plants
 - Wash car
 - Drain water slowly onto grass or flower beds



- Clear debris from screen and gutters
- Check for holes prevent mosquitoes
- Winter:
 - Drain and rinse
 - Remove any debris
 - Store inside or upside down

Maintenance



Rain Gardens





Figure 2.1. Overview of a Rain Garden Adapted from Washington State University Extension, 2013



Rain Garden Resources

 U CONN CLEAR Rain Garden App: <u>http://go.umd.edu/4pd</u>

Regional Rain Garden App



Planning to build a rain garden?

The Regional Rain Garden app developed by The Center for Land Use Education and Research (CLEAR) at the University of Connecticut walks homeowners through each step of rain garden installation.





 Chesapeake Stormwater Network: Homeowner BMP Guide <u>http://go.umd.edu/4pe</u>

Publications

Homeowner BMP Guide

April 22, 2013



CSN's newly released Homeowner BMP Guide presents a step by step approach for analyzing your property to find out whether it makes sense to install a rain garden or other residential stewardship practices.

Learn more...



Resources

 Rain Gardens Across Maryland <u>http://go.umd.edu/4pn</u>

Rain Gardens Across Maryland



Resources

 Anne Arundel Watershed Stewards Academy Rainscaping Manual <u>http://aawsa.org/raingardens/</u>

> Watershed Stewards Academy Rainscaping Manual





Consider...

- Why a Rain Garden?
- Is a Rain Garden necessary?
- Could the same effect be accomplished with rain barrels and conservation landscaping?



• Google Maps/Earth

Landserver.org

Map the Yard

Map My Property

Enter an address, placename, state, county, ZIP or other geographic name to position the map.

21601

Find It!

Draw Your Property Boundary:

Select the Polygon tool I from the Drawing Tool palette to draw the boundaries of your property. Double-click your mouse when you have completed drawing the boundary.

Generate My Report	





Identify Flow Path



- Where do downspouts drain?
- Where does water go when it rains?
- Get outside!



Site Assessment

- Where should the garden be located?
 - Identify all structures on your sketch/map
 - Intercept flow path from downspouts and hard surfaces
 - Avoid utilities, foundation, septic and well
 - Miss Utility!
 - Don't just choose low wet spots
 - Good sun exposure, but shade is ok too
 - Identify Desire Lines



Soils and Drainage

Soil Test

- RG App shows soil type
- SoilWeb App
- List of labs on HGIC website





- Drainage Test
 - Dig hole 18" deep
 - Fill with water and let drain
 - Refill
 - Observe for 12-48



Planning the Garden

Good Drainage:

- 1-2 inches per hour
- Determine the size of the garden
- RG App
 - 1.5 in storm
 - 6 in ponding depth
- Homeowner BMP Guide worksheet
 - 1 in storm
 - 6 in ponding depth

Poor Drainage:

- Consider another site
- increase the amount of soil amendment or depth





Size Depends On:

GPS Help



Calculate Clear

- Slope
 - Generally less than 5% slope in OPA
- Desired ponding depth
 - 5-6 inches
- Drainage area
 - RG size is 10-12%
- Amount of storm captured
 - aim for 1.5 inches

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- Best fit for the landscape?
 - Kidney
 - Long oval
 - Round
- Maximize sun exposure

Shape





Excavate and Amend

- Miss Utility!
- Dig to desired ponding depth
- Remove and keep top 6" of soil for amending
- Build Berm/fill low spots in yard with bottom soil
- Create inlet and outlet
- Amend soil with organic matter, leaf compost, pine fines, claybuster, etc.





Additional Considerations

- What flower profile/texture is desired?
- Maximize sun exposure
- Color palette
- Wildlife/pollinator attractors
- Wet "feet" planting zones



Design Templates

Low Impact Development Center



Rain Garden Templates

https://go.umd.edu/w6M



Sun Coastal Plain



- A Ilex opaca (American Holly), 8' o.c.
- B Vaccinum corymbosum (Highbush Blueberry), 3' o.c.
- C Rhododendron viscosum (Swamp Azalea), or Cornus sericea (Redosier D or Ilex glabra nana (Dwarf Inkberry)
- D Hemerocallis hybrids (Hybrid daylilies e.g. 'Happy Returns'), 12" o.c. or PI
- E Wildflower Mix, 85 SF; sample mix:
 - 50% Rudbeckia hirta (Black-Eyed Susan)
 - 20% Echinacea purpurea (Purple Coneflower),
 - 20% Liatrus spicata (Blazing-Star),
 - 10% Asclepias tuberosa (Butterfly Weed)



Mulch and Maintain!

- 2-3 inches of mulch (hardwood)
- Water to begin
- Some plant mortality is expected
- Clear inlet and outlet
- Inspect after storms
- Establish a routine





Figure 2.1. Overview of a Rain Garden Adapted from Washington State University Extension, 2013



Conservation Landscaping







Resources

- Native plant nurseries
- Garden Centers ask for natives
- F&WS Native Plants guide
- HGIC!
- Watershed team

