

Rain Garden Basics

- What is a rain garden?
- Why are they important?
- Where can I put a rain garden?
- How do I construct it?
 - Examples
- What plants should I use?
- Questions???

What is a rain Garden?

- Landscape area designed to collect rain water

 usually from impervious surface or
 downspout.
- Holds water on site until it can naturally infiltrate into ground



Rain gardens are not wetlands



Wetlands - areas of complex geology and biology

- Allow rainwater to infiltrate slowly and recharge ground water
- May be wet all or part of the year
- Filter pollutants
- Create vital habitat for wildlife



Unlike wetlands, rain gardens are designed to drain quickly



If you have an area of springs or wetlands, call the Pennsylvania Department of Environmental Protection

So why are rain gardens so important?



Hydrologic Cycle



Wetlands, forests, meadows, play an important role in this cycle. They catch and hold runoff, returning it to groundwater.

Our activities have disrupted the cycle



We lose between 400 and 700 sq. miles of wetlands each year



Rain falls on our roadways, parking lots, roofs and lawns





Water emerges at a high velocity through storm sewer systems.

The result is flooding





And with each rain "runoff", organic matter, soil, fertilizer, oil and chemicals get added to our lakes and streams.









If each of these houses had a rain garden





So, do you need a Rain Garden?



Do you have?

- Low lying areas
- Drainage from pavement, driveways, downspouts



OR:

- Are you concerned about pollutants entering the storm-water system?
- Are you concerned about the Quality of Streams, Rivers, Lakes, etc...?
- Are you concerned about wildlife?
- Do you like plants and want to beautify your yard?

Do you need a Rain Garden?



Where can rain gardens be placed?



At source of water – natural or man-made

Runoff from road

Downspouts

2701







Parking lot planter islands (bioretention)

Even industrial locations can have a rain garden



There is no one-size fits all for rain gardens





Can be simple or complex, large or small

Tips for Siting Your Rain Garden

Your rain garden

- Should be at least ten feet from a foundation
- Integrate with your landscaping
- Sunny or partly sunny locations are best, but a shade garden is possible

Siting Your Rain Garden (cont)

 Should not be located where water ponds 4-5 days



Do a perk (infiltration) test – if water doesn't drain within 24 hours the site isn't right for a rain garden.

Answering Neighbors' Concerns

- There shouldn't be any if the garden is properly sited and designed.
- Mosquitoes have a 7 to 12 day life cycle from egg to adult.
- Mosquitoes that carry most diseases don't live in ponds. They prefer small amounts of standing water such as holes in trees, old tires or bird baths.
Siting Your Rain Garden (cont)

A site with less than 12 % slope is best

Do not locate over septic system

Determining Rain Garden Depth & Size

Balance between:

- drainage area
- slope
- soil type
- desired garden size



Drainage area

- Sizing example
 - Area of the house roof is 60' x 30' or 1800 sq ft

-7'-

¼ of this drains to one downspout where rain garden will be.

Contributing area is 1800 x 0.25 = 450 sq ft

Divide this area by 6. 450 sq ft/6= 75 sq ft. (this sizes garden to hold 1" runoff in a garden 6" deep)



Soil type Depth & size depends on soil type

- Extremely well drained? Gravelly, sandy soils
- Well drained? Silty, loamy soils
- Poorly drained? Clay

Your goal is to have all water drain from the site within a day or two.

Slope Depth of garden also depends on slope

Slope less than 4% - dig 3-5" deep
Slope between 5-7% - 6-7" deep
Slope between 8-12% - 8" deep

For more information on how to size a rain garden, see the

Wisconsin Rain Garden Manual online

A Rain Garden Example













Add a weed barrier and mulch





Planting Your Rain Garden

(The fun part)

Go Native!



Value of Using Native Plants



Deeper roots absorbs more water

Use no fertilizer

Use little or no pesticides

Easy maintenance after first year

Do not require watering after establishment

Wildlife benefit

Planting a Rain Garden

- Variety ...
 - Woody Shrubs give great structure and provide additional wildlife habitat



Rain Garden Design - Plants

- Variety ...
 - Perennials provide the constant
 changes throughout the seasons ...



Plant in "zones" determined by moisture levels



Plants for Rain Gardens

Zone 1 - Wettest Zone

The wetter the area, the more sun plants can take



Aronia melanocarpa Black chokeberry

- Ht 3-6'
- Sun to part shade



Cephalanthus occidentalis Buttonbush

Ht –to 15' Sun to part shade



Ilex verticillata – Winterberry Holly

Ht: 6-12' Full sun to part shade

Viburnum nudum - Possumhaw

- Ht: 5-20'
- Full sun to part shade_____









Wet Zone Herbaceous perennials

Iris versicolor – Blue Flag Iris

Ht: 1' Sun to part shade





Packera aurea (Golden Ragwort)



Osmunda sensibilis – Sensitive Fern

Ht: 1-2'

Shade-part shade



Lobel Ata Fathalison

Cardinal Flower

Ht: 2-4'

Sun-part shade



Middle Zone Trees and Shrubs

- Amelanchier laevis or canadensis Serviceberry
 - Ht: ~35'
 - Sun to part shade


llex glabra – Inkberry holly

Ht: 3-6' Sun to part shade



Itea virginica - Virginia Sweetspire

Ht: 2-6' depending on plant

Sun to shade



Middle Zone Herbaceous Perennials

Liatris spicata Blazing Star

Ht: 3-4' Full sun







Eupatorium fistulosum Joe Pye Weed

Ht: to 8' Full sun



Plants for Transition Zone

Most garden plants will work in this zone

Clethra alnifolia - Summersweet

Ht: 2-8' Full sun to part shade



Viburnum dentatum Arrowood viburnum

- Ht: 6-8'
- Sun to partshade



Transition Zone Herbaceous Perennials

Baptisia australis – Blue False Indigo

• Ht: 2-3'

• Sun



Amsonia tabernaemontana Blue Star

• Ht: 2-3'

 Sun to part
shade



Contraction of the second

Chrysogonum virginianum (Green and Gold)

Solidago sphacelata 'Golden fleece' Goldenrod

- Ht: 1-2'
- Sun to
- part shade



Schizachyrium scoparium

- Ht: 2-3'
- Sun

















Rain garden - East Wing







Plan by MAE scapes partner Mark Willoughby





QUESTIONS ??

You are invited:

 MAEscapes Native Plant Fest & Sale – York County Extension, May 18, 9am till 2:00 pm

• Join our Native Garden Tour on June 29, 2013

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