Rain Gardens

Susan Bryan, Rain Garden Coordinator, Washtenaw County Water Resources
Rain Gardens:
Cleaning up the River, One Garden at a Time

with

Susan Bryan, MLA
Rain Garden Coordinator,
Washtenaw County Water Resources Commissioner’s Office
EMU Rain Gardens, designed by InSite Design Studio

EPA; “functional and appealing site drainage that treat storm water as a resource rather than a waste product.”
Rather than in the street drain as waste, Rain Garden placement safely collects our water resource and absorbs it into the earth.
Put Down Some Roots...Plant Prairie

Improve water quality • Anchor soil • Provide wildlife habitat • Sequester carbon

Native tallgrass prairie is the most endangered ecosystem in North America

Figure Source: Minnesota Department of Natural Resources
Rain Garden Plants

Attract Pollinators

Summer 2012
Rain garden at Baylis & Platt
Ann Arbor

Photo Credit: Susan Bryan

Photo Credit: Judith Heady, MRG
A downspout provides all that is needed

Photo Credit: Susan Bryan
Roger Moon
MRG 2012

Rain Garden Plants  Attract Pollinators

prevents roof runoff from reaching driveway & street drain.

Photo Credit: Susan Bryan

Roger Moon
MRG 2012
Wet Spot  Difficult to mow

You already have a rain garden!
It just needs rain garden plants.
Drains were trenched-in to a pop-up. Lawn around the pop-up was saturated, leaving ruts in the lawn.

Photo Credit: Susan Bryan
Wet Spot  Solved by a Rain Garden

Photo Credit: Susan Bryan
Water in the Basement  Solved by a Rain Garden

Winter 2011  Caddell Residence

Photo Credit: Susan Bryan
Solved by a Rain Garden

Water in the Basement - solved

Caddell Residence
Summer 2011

Photo Credit: Susan Bryan
Ice on the sidewalk

Photo Credit: Susan Bryan
Contaminants & water combine to form “Hydrofilth” in the storm drain.

West Michigan Environmental Action Council
Pollution . . . Into the Huron River
"Environmental Stressors" on our Lakes
“The biggest remaining water quality problem is polluted runoff that carries pollutants from many diverse sources into our streams, lakes, and rivers. Source areas include farm fields, urban streets and parking lots, suburban lawns, golf courses, construction sites, and atmospheric deposition”. 
The natural water cycle includes:

- Condensation
- Evapotranspiration
- Evaporation
- Runoff
- Lots of infiltration
- High groundwater flow

Figure credit: Auckland City Council
Natural and Urban Distribution of Rainfall

"Natural & impervious cover diagrams EPA" by U.S. Environmental Protection Agency, Washington, D.C.
Rain or snow melt on streets, parking areas, lawns, rooftops or other developed land that flows directly into nearby stormdrains. It mixes with whatever it encounters along its path.
Stormwater Runoff  What is the problem?

It becomes “HYDROFILTH “

made up of things we just don’t want in our water…pathogens, heavy metals, pesticides, salts, oil and common litter.
Pollutants

Treated in a Rain Garden:

**Hydrocarbons** (PAHs, oils, fuel) adsorbed by the soil, biodegraded, or taken up by plants.

**Trace Metals** (copper, cadmium, lead, mercury, and zinc) largely adsorbed by particles in the soil and mulch. A small fraction of the metals are taken up by plants. (crushed egg or sea shells help capture these)

**Pathogens** (from birds and animals) Microbes found in rain gardens break down organic substances and may eat harmful pathogens. The root zone-soil interface provides a medium for these microbial processes to occur.

**Nutrients** (fertilizers and organic waste) slowing of the water flow aids absorption by the plants and soil.
Go Outside see if water escapes from your property
Story of a Rain Garden  Roger Moon

Credit: MapWashtenaw aerial photo
http://www.ewashtenaw.org/government/departments/gis/MapWashtenaw_Main.htm
Story of a Rain Garden

Photo Credit: Roger Moon
Roger started out by killing the grass with black plastic.
Story of a Rain Garden

Roger Moon

Photo Credit: Roger Moon
Compost

amend the soil with compost

The wonders of compost...

"Please tell me you didn't pay for that stuff."

Photo Credit: Tricia Jones
YES, HUMAN.

PLANT FOR YOUR RABBIT OVERLORDS.
Wild Ones Ann Arbor garden club visits Roger’s rain garden for a tour 2013
Story of a Rain Garden

Roger Moon

Photo Credit: Roger Moon
Rules
For Building a Rain Garden

Measure roof area that drains to RG. 20% of that is RG area. (30% for clay).

Plant the right plants!

>10’ from house

Water pools 3-6” deep. No deeper!

A safe overflow

Mix in Compost. Mulch.

Northfield NCO 2012 http://northfield.org/content/rain-garden-graphic
Plants

Rain Garden Bottom - Sun

General bottom of rain garden (Sun)

- Swamp Milkweed: Asclepias incarnata
- Prairie Dock: Silphium perfoliatum
- Beardtongue: Penstemon digitalis & cultivars
- Switchgrass: Panicum virgatum & cultivars
- Joe Pye Weed: Eupatorium purpureum
- New England Aster: Aster novae-angliae
- Blue False Indigo: Baptisia australis
- Hot Lips Turtlehead: Chelone lyonii ‘Hot Lips’
- Purple Coneflower: Echinacea purpurea
- Gayfeather: Liatris ‘Kobold’
Plants

Rain Garden Bottom - Shade

General bottom of rain garden (Shade)

- Maidenhair Fern
- Ostrich Fern
- Blue Lobelia
- Cardinal Flower
- Hosta (some)
- Early Meadow Rue
- Astilbe cvs.
- Snakeroot
- Wild Iris
- Virginia Waterleaf
Washtenaw County Rain Garden Education

Design Assistance Program
we design it; you dig it
- www.ewashtenaw.org/raingardens

Master Rain Gardener Training
training you to design it yourself
- Feb 25-March 24 Thursday mornings
- August 11-Sept 8 lunchtime online training
- www.MasterRainGardener.org
Master Rain Gardener Hall of Fame

Your garden here
Rain Gardens are beautiful!

Miller Avenue Rain Gardens, Ann Arbor
Rain Gardens

Rain garden by Scarlett Bennett, MRG 2011 on Portage Lake, Washtenaw County, MI
Rain Gardens  

What they look like

Cardinal Flower  
Obedient Plant  
Blue Flag Iris  
Boneset  
Redbud

Lobelia cardinalis  
Physostegia virginiana  
Iris virginica  
Eupatorium perfoliatum  
Cercis canadensis

Rain garden by Stefan Szumko, MRG 2012 at Eberwhite Elementary School, Washtenaw County, MI
Rain Gardens

What they look like

Cardinal Flower
Blue Flag Iris
Switchgrass

Lobelia cardinalis
Iris virginica
Panicum virgatum

Schwende-Page Rain Garden, design by InSite Design Studio
“If you want to know more, sign up!”

Master Rain Gardener class
Thursday mornings 9:30am-12:30
February 25 – March 25, 2016
$90, (discount for Miller/Madison residents)
705 Zeeb Road, Ann Arbor, MI

Master Rain Gardener Online class
August 11-Sept 8 Thursdays lunchtime training from your computer or phone!

www.MasterRainGardener.org
Rain Gardens

Thank you!
Questions?

www.ewashtenaw.org/raingarden

www.MasterRainGardener.org

~Susan Bryan,
Washtenaw County Water Resources

Evan Pratt, Washtenaw County Water Resources Commissioner
Benefits

Credit on your Stormwater Bill

AA residents qualify for a credit on their stormwater bill.
www.a2gov.org/storm

Jonathan Parker, Master Rain Gardener 2012

Photo Credit: Susan Bryan