Rain Garden

Improve water quality and reduce storm water runoff by planting a rain garden in your yard.

Rain Garden at Knox County Public Library.
Installed by Knox County Soil and Water
Conservation District June 2010.

A rain garden is a landscaped area with native perennial plants that can tolerate a large amount of water on the roots. They are planted in areas that naturally pool after it rains, but dries up in 24 hours.

Rain gardens provide a place for storm water to go after it rains. The plant roots filter the water, therefore, reducing the amount of pollution that runs off into streams, and rivers.

Rain gardens were first used in the early 1990s in Maryland to reduce pollution into the Chesapeake Bay.

Where should I plant a rain garden?

- A rain garden must be 10 feet from the foundation of any building and cannot be above a septic field.
- Ideally the location should be in full to partial sun.

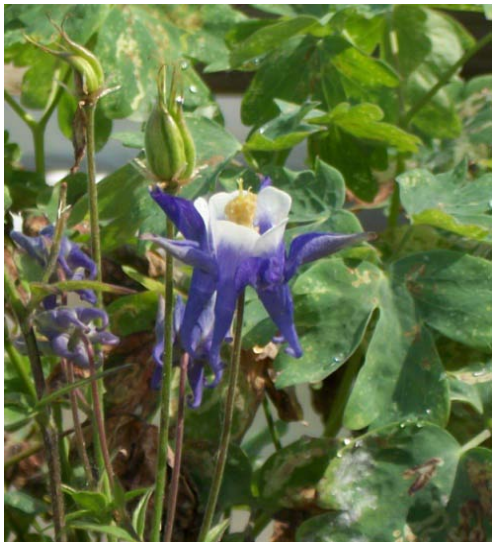
Determine your soil infiltration

- In late winter to early spring, dig a hole the size of a coffee can and saturate the soil with water.
- Fill the hole with water and measure the depth, then measure again in 4 hours.
- The difference in water depth after 4 hours should be equal to or more than 1 inch. If the difference is less than 1 inch, get professional assistance before building your rain garden.
- Soil infiltration is very important because some areas of Indiana have high water tables and poor drainage. Check your county soil survey for more information.

How big should a rain garden be?

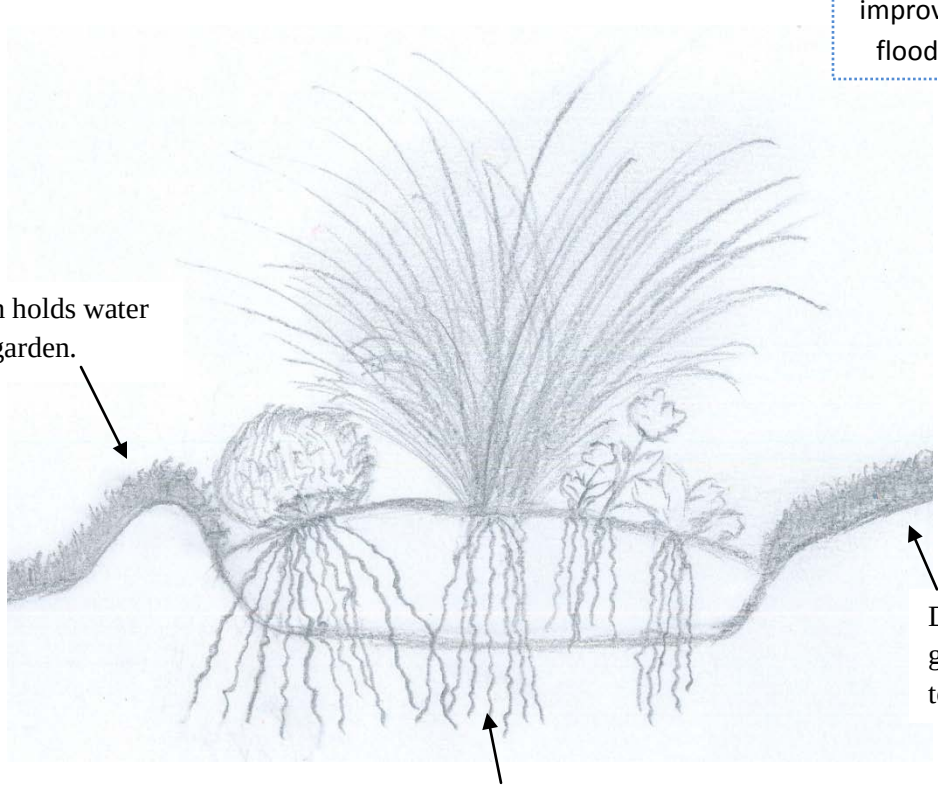
- Measure the surface area of impervious surfaces (roof, concrete, patio) that will drain to the rain garden.
- Most rain gardens are 4-8 inches deep. For 6 inches deep, multiply the impervious surface area by 25% to determine the size of the garden.
- The rain garden needs to drain within 48 hours. If it does not, make adjustments to the size, overflow area, density and type of plantings, or the amount of runoff being sent to the garden.

Purple Cone Flower. Photo courtesy of Premier Landscape & Design



Columbine. Photo courtesy of Perk-A-Lawn Garden

Any size rain garden will help improve water quality and alleviate flood damage from storm water.



A berm holds water in the garden.

Direct water downhill to your garden or extend a down spout to your garden.

Deep roots help drain and filter water after a rain storm. This helps reduce the amount of pollution in local waterways.

Design your Rain Garden

- Choose a shape that fits your yard with the dimension that you determined in your size calculation.
- Select plants that you like, this is your garden. Plant plants in groups of 3, plant grasses around your flowers to give your flowers support as they get larger. Select plants that can tolerate wet and dry conditions.
- You can use rocks, arbors, or any other border material to define the boundaries of your garden, but it is important that it does not interfere with water flow.
- Rain gardens are designed to be dry between rain storms so mosquitoes will not be a problem.

Soil type and drainage are very important. Clay soils are poorly drained. If your soil has a high clay content you may need to replace the soil with a sand and topsoil mixture which drains more easily.

Take into consideration the height and bloom color of each plant.

Rain garden Plants that are Native to Indiana

- Native species will need little to no fertilizer and pesticides.
- Native plants have deep roots. Deep roots help improve water quality by filtering the ground water and they channel soil for rain water which increases the soils water holding ability.
- Native plants attract native wildlife.

Use wildflowers that bloom at different times for a long flowering season.

Aster. Photo courtesy of Premier

Phlox. Photo courtesy of Premier

Black Eyed Susan. Photo courtesy of Perk-A-Lawn Gardens

Foxglove. Photo courtesy of Perk-A-Lawn Gardens

Wildflowers:

Common Name	Botanical Name	Light	Bloom Color	Bloom Time	Height
Autumn Sneezeweed	*Helenium autumnale*	Full/ Part Sun	Yellow	July- Aug.	4’
Blue Flag Iris	*Iris versicolor*	Full Sun	Blue	June- July	2-3’
Boneset	*Eupatorium perfoliatum*	Full/ Part Sun	White	Aug.- Sept.	2-4’
Bottle Gentian	*Gentiana andrewsii*	Full/ Part Sun	Purple	Aug.- Sept.	1-2’
Cardinal Flower	*Lobelia cardinalis*	Full/ Part Sun	Red	July- September	2-5’
Columbine	*Aquilegia canadensis*	Shade	Scarlet, yellow	Spring- Summer	1-2’
Culvers Root	*Veronicastrum virginicum*	Full/ Part Sun	White	Early- Mid Summer	2-6’
Dense Blazing Star	*Liatris spicata*	Full Sun	Purple	July, Aug., Sept.	3-4’
Dwarf Crested Iris	*Iris cristata*	Part Sun	Violet- Blue	April- May	4-16”
Flat-topped Aster	*Aster umbellatus*	Part Sun	White-yellow	Aug.- Sept.	2-7’

Foxglove Beardtongue	*Penstemon digitalis*	Full/ Part Sun	White, tented with purple	May- July	2-4’
Golden Alaxanders	*Zizia aurea*	Full/ Part Sun	Yellow	Late spring- early summer	2 ½’
Golden Ragwort	*Senecio aureus*	Full/ Part Sun	Yellow	Mid-late Spring	½- 2’
Great Blue Lobelia	*Lobelia siphilitica*	Full/ Part Sun	Blue	July- September	1-4’
Hollow Joe-pye weed	*Eupatorium fistulosum*	Full Sun	Pink	June, July, Aug.	3-8’
Marsh Marigold	*Caltha palustris*	Full Sun	Yellow	April- May	1-2’
Marsh Milkweed	*Asclepias incarnate*	Full/ Part Sun	Pink- red	June- Aug.	3’
Monkeyflower	*Mimulus ringens*	Full Sun	Pink- Purple	Late spring- early summer	2-3’
Mountain Mint	*Pycnanthemum virginianum*	Full/ Part Sun	White	July	3’
New England Aster	*Aster novar-angliae*	Sun	Pink, purplish	Aug.- Oct.	3-6’
Pink Turtlehead	*Chelone oblique*	Part Sun	Pink	Late summer- early fall	1-3’
Purple Coneflower	*Echinacea purpurea*	Full/ Part Sun	Purple	July- Sept.	3-4’
Queen-of-the-Prairie	*Filipendula rubra*	Full Sun	Pink	Early- Mid summer	3-6’
Riddell’s Goldenrod	*Solidago riddellii*	Full/ Part Sun	Golden	Aug., Sept., Oct.	2-4’
Royal Catchfly	*Silene regia*	Full/ Part Sun	Red	Mid.- late summer	2-3’
Shining Aster	*Aster firmus*	Full/ Part Sun	Pale Blue-White	Aug.- Oct.	2-8’
Showy Black-Eyed Susan	*Rudbeckia fulgida speciosa*	Full	Yellow	Aug.- Sept.	3’
Smooth Aster	*Aster laevis*	Full Sun	Blue	Aug.- Oct.	1-4’
Smooth Ironweed	*Vernonia fasciculate*	Full Sun	Purple	Late summer- early fall	2-4’
Smooth Penstemon	*Penstemon digitalis*	Full Sun	White	June- July	2-3’
Spotted Joe-pye weed	*Eupatorium maculatum*	Full Sun	Pink	June-Sept.	4-6’
Swamp Aster	*Aster puniceus*	Full/ Part Sun	Lavender-pale Blue	Late summer- fall	2-6’
Swamp Milkweed	*Asclepias incarnata*	Full Sun	Red/ Pink	June- July	3-5’

Sweet Black-Eyed Susan	*Rudbeckia subtomentosa*	Full/ Part Sun	Yellow	Aug., Sept., Oct.	5’
White Turtlehead	*Chelone glabra*	Full Sun	White to Purple	July- Oct.	1-3’
Wild Stonecrop	*Sedum ternatum*	Part Sun	White	Late Spring- Early Summer	up to 10’
Wrinkled Goldenrod	*Solidago rugosa*	Full Sun	Yellow	Mid Summer- Fall	1-6’

Prairie Dropseed. Photo courtesy of Premier.

Grasses:

Big Bluestem (*Andropogon gerardii*)
Blue- joint Grass (*Calamagrostis canadensis*)
Fowl Manna Grass (*Glyceria striata*)
Indian Grass (*Sorghastrum nuutans*)
Little Bluestem (*Schizachyrium scoparium*)
Prairie Cordgrass (*Spartina pectinata*)
Prairie Dropseed (*Sporoboulus heterolepis*)
Switchgrass (*Panicum virgatum*)
Virginia Wild Rye (*Elyus virginicus*)

Switchgrass. Photo courtesy of Premier.

Sedges:

Burr Sedge (*Carex grayii*)
Crested Sedge (*Carex cristatella*)
Fox Sedge (*Carex vulpinoidea*)
Frank’s Sedge (*Carex frankii*)
Pointed Oval Sedge (*Carex tribuloides*)
Porcupine Sedge (*Carex hystericina*)
Riverbank Tussock Sedge (*Carex emoryi*)
Tussock Sedge (*Carex stricta*)
Yellow Fox Sedge (*Carex annectans xanthocarpa*)

Fox Sedge. www.plants.usda.gov

Trees/Shrubs: (many trees will work well in or near a rain garden, consult a professional for recommendations)

Small (Under 30 feet)
Alder (*Alnus incana*)
American Bladdernut (*Staphylea trifolia*)
American Hornbeam (*Carpinus caroliniana betulaceae*)
Buttonbush (*Cephalanthus occidentalis*)
Gray Dogwood (*Cornus racemosa*)
Hawthorn Species (*Crataequs*)
Paw-Paw (*Asimina triloba*)
Red-Osier Dogwood (*Cornus sericea*)

Red-Osier Dogwood. www.plants.usda.gov

Silky Dogwood (*Cornus amomum*)
Spicebush (*Lindera benzoin*)
Serviceberry (*Amelanchier*)

Medium (30 to 50 feet)

American Arborvitae (evergreen) (*Thuja occidentalis*)
American Hornbeam (*Carpinus caroliniana*)
Black Willow (*Salix nigra*)
Ohio Buckeye (*Aesculus glabra*)
River Birch (*Betula nigra*)
Serviceberry (*Amelanchier arborea*)

Ohio Buckeye. www.plants.usda.gov

Eastern Hemlock. www.plamts.usda.gov

Large (50 to 120 feet)

Bald Cypress (*Taxodium dstichum*)
Bur Oak (*Quercus macrocarpa*)
Eastern Hemlock (*Tsuga Canadensis*)
Pin Oak (*Quercus palustris*)
Red Maple (*Acer rubrum*)
Shellbark Hickory (*Carya laciniosa*)
Swamp White Oak (*Quercus bcolor*)
Sycamore (*Platanus occidentalis*)

Different plants attract different critters

Plants that attract Butterflies: Common Milkweed, Aster, Joe-pye-weed, Purple cone flower, Smooth Ironweed
Plants that attract Humming birds: Columbine, Cardinal flower, Lobelia
Plants that attract Birds: Hollow Joe- pye-weed, Marsh Milkweed, Aster, Cone flower
Plants that attract Caterpillars: Milkweed, Spicebush, Birch
Plants that attract Bees: Milkweed, Black-eyed Susan, Cardinal flower, Goldenrods, Mints

Avoid planting invasive plants such as: Morning Glory, Japanese honeysuckle, Amur honeysuckle, Tartarian honeysuckle, Morrow honeysuckle, Autumn-olive, Garlic mustard, Oriental Bittersweet, Kudzu, Japanese Stiltgrass, Tree of Heaven, Japanese Knotweed, Canadian thistle. Find more information about plants to avoid visit the Southern Indiana Cooperative weed management website. www.fs.fed.us/r9/hoosier/docs/plants/sicwma.htm

Excavation

- Call 1-800-382-5544 two days before you dig to locate any underground utilities.
- Outline the shape of your rain garden and remove any existing sod or plants.
- Dig about a 6 inch bowl with sloping sides and a level bottom. A level bottom is needed to evenly distribute water throughout the garden for maximum percolation.
- Make sure the bottom of your bowl is level by laying a board in the garden with a carpenter's level on it and correct the areas that are not level.
- Make a berm with the soil excavated from the garden and place it at the downhill side of your garden or the side opposite from water entry.
- Cover berm with mulch, grass, or native dry tolerant plants to prevent erosion.

Plant Installation and Maintaining Your Rain Garden

- Plant recommended rain garden plants that you like.
- Group the same plants together in clumps of 3.
- Use grass to help support flowers.
- Install and care for plants just like you would any other landscaping.
- Plants may need to be watered until growth is established.
- Rain gardens may need to be weeded until plants are of sufficient size to out compete weeds.
- Use a mulch of your choice to keep weeding to a minimum. Keep in mind that some mulch will float more than others.
- Keep trash and sediment out of your rain garden.
- If your rain garden has a subsurface drain it will need additional maintenance. Consult a professional.
- Native plants do not need fertilizer, herbicides, or pesticides.

You can play an important role in improving the water quality and alleviating flood damage in your community by planting a rain garden in your yard.

For more information:

Rain gardens help improve water quality and beautify your yard

Knox County Soil & Water Conservation District
2015 Hart Street
Vincennes, IN 47591
(812) 882- 8210x3
Fax: 882-886-3748

USDA- Natural Resource Conservation Service www.in.nrcs.usda.gov
National Plant Database http://plants.usda.gov
Indiana Native Plants & Wildflowers Society www.inpaws.org
Illinois Wildflowers www.illinoiswildflowers.info
Michigan State University www.nativeplants.msu.edu
Rain Gardens of Western Michigan www.raingardens.org

Photos courtesy of:

National Plant Database http://plants.usda.gov

Premier Landscape & Design
1303 6th St.
Vincennes, IN 47591
(812) 886-1608

Perk-A-Lawn
2470 Maranatha Ln
Vincennes, IN 47591
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(800) 251- 5752

The information in this manual has been compiled from the Indiana UDSA/NRCS, the Vanderburgh County SWCD, the Wisconsin Department of Natural Resources and Spence Nursery.

The Knox County SWCD is not a professional contractor however the SWCD staff can offer advice on placement, plant selection, and basic information concerning installation of your Rain Garden.