RAIN GARDENS 101

By HLWD July 2015

Heron Lake Watershed District
507-793-2462 jan.voit@mysmbs.com

WHAT IS A RAIN GARDEN?

A rain garden is a garden of native shrubs, perennials, and flowers planted in a depression, which is generally formed on a natural slope. It is designed to temporarily capture and soak in rain water runoff that flows from impervious surfaces, such as rooftops, driveways, patios, or lawns. Rain gardens are effective in removing up to 90% of nutrients and chemicals and up to 80% of sediments from the rainwater runoff. Compared to a conventional lawn, rain gardens allow for 30% more water to soak into the ground.

A rain garden is not a water garden. Nor is it a pond or a wetland. Conversely, a rain garden is dry most of the time. It typically holds water only during and following a rainfall event. Because rain gardens will drain within 12-48 hours, they prevent the breeding of mosquitoes.

After a storm, water fills rain gardens then slowly filters into the ground rather than running directly into a storm drain or lake.

WHY IS RAINWATER RUNOFF A PROBLEM?

Every time it rains, water runs off impermeable surfaces, such as roofs or driveways, collecting pollutants such as particles of dirt, fertilizer, chemicals, oil, garbage, and bacteria along the way. The pollutant-laden water enters storm drains untreated and flows directly to nearby streams and ponds. The US EPA estimates that pollutants carried by rainwater runoff account for 80% of all water pollution.

Rain gardens collect rainwater runoff, allowing the water to be filtered by vegetation and percolate into the soil, recharging groundwater aquifers. These processes filter out pollutants.
WHAT MAKES A RAIN GARDEN DIFFERENT FROM A TRADITIONAL GARDEN?

In the design of a rain garden, typically six to twelve inches of soil is removed and altered with tilling. Compost and sand are added to increase water infiltration. The type of alteration to the soil depends on the current soil type.

Rain gardens are generally constructed on the downside of a slope on your property and collect rainwater runoff from the lawn, roof, and/or the driveway. Once water collects in the rain garden, infiltration may take up to 48 hours. Also, rain gardens incorporate native vegetation; therefore, no fertilizer is needed and after the first year, maintenance is usually minimal.

HOW DOES A RAIN GARDEN WORK?

“RAIN GARDENS DIVERT WATER AWAY FROM THE STORM DRAIN SYSTEM AND FILTER IT INTO THE GROUND”

Slow it down, spread it out, soak it up! Through location, ponding, depth, and good drainage, rain gardens divert water away from the storm drain system and filter it into the ground.

LOCATION: Rain gardens are situated in a low spot in the landscape so that they collect runoff.

POND the runoff: They are built up on the edges with a berm so that a large amount of runoff can pool on the surface.

DRAINAGE: With a layer of gravel at the bottom of the garden they are very well drained and can filter the water back into the ground rapidly during and after a rain event.

FILTER: By allowing water to collect, pond, evaporate, and filter through native plants, soil, sand and gravel into the ground, runoff is cleaned, transformed, and minimized.

WHAT BENEFITS DO RAIN GARDENS PROVIDE TO MY COMMUNITY?

- Improves water quality by filtering out pollutants
- Decreases stormwater runoff by 80 percent
- Keeps 10 to 20 pounds of phosphorus from entering the drains and the lakes
- Aesthetically pleasing
- Preserves native vegetation
- Provides localized stormwater and flood control
- Attracts beneficial birds, butterflies and insects by providing valuable habitat
- Easy to maintain after establishment
WHAT KIND OF MAINTENANCE DOES A RAIN GARDEN REQUIRE?

When native plants are used, your rain garden will not require pesticides or fertilizer. As the rain garden is establishing during the first and second year or during periods of little to no rainfall, occasional watering of the plants may be necessary. Likewise, weeds will need to be removed and dead plants may need to be replaced. Once the plants in the rain garden have become established and grow larger, they will eventually out-compete the weeds.

WHAT TYPES OF PLANTS THRIVE BEST IN A RAIN GARDEN?

As a rule, native vegetation should be incorporated into a rain garden. Native plants don’t require fertilizer, have good root systems, and are better at utilizing the water and nutrients available in their native soils than non-native species. Perennials, shrubs, wildflowers, or a mixture of all three can be planted. Check with your local nursery for a list of rain garden approved plants for your hardiness zone, or search the rain garden plant database.

As a rule of thumb avoid planting trees in your rain garden, as trees generally absorb more water than surrounding plants. Also, never plant invasive or noxious species in a rain garden, such as purple loosestrife.

WHAT SOME EXAMPLES OF NATIVE VEGITATION USED IN MN?

<table>
<thead>
<tr>
<th>Flowering:</th>
<th>Grasses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Flag Iris</td>
<td>Little Blue stem</td>
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<tr>
<td>Wild Lupine</td>
<td>Bur Sedge</td>
</tr>
<tr>
<td>Prairie Lily</td>
<td>Pointed Broom Sedge</td>
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<tr>
<td>Black-eyed Susan</td>
<td>Fox Sedge</td>
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<tr>
<td>Purple Coneflower</td>
<td></td>
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<tr>
<td>New England Aster</td>
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</tbody>
</table>

“NATIVE PLANTS DON’T REQUIRE PESTICIDES OR FERTILIZER.”
We’re on the web!

hlwdonline.org

Additional Information:

Minnesota Department of Natural Resources:

Plants of Minnesota:
http://www.dnr.state.mn.us/plants/index.html
http://www.dnr.state.mn.us/gardens/nativeplants/index.html

Minnesota Pollution Control Agency:

Faribault County Soil & Water Conservation District:
Start-to-Finish Rain Garden Design: A Workbook for Homeowners

Blue Thumb—Planting for Clean Water:
Native Gardens, Raingardens, and Shoreline Stabilization
http://bluethumb.org/

KidsGardening—helping young minds grow:
http://local.kidsgardening.org/Minnesota-Minnesota.html

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