



**Stream Team Academy Fact Sheet Series**

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Collect this entire educational series for future reference! Contact us at 1-800-781-1989 if you'd like a copy of previous Fact Sheets and a binder for storing them.

# RAIN GARDENS

## An Educational Series For Stream Teams To Learn and Collect

By Danelle Haake, Stream Team 3745 – River des Peres Watershed Coalition

Tending a garden is a joy for many homeowners. For some, the garden is also becoming an attractive way to help reduce water pollution and flash-flooding.

### HOW RAIN GARDENS WORK

Nationwide, our landscape is increasingly impervious, meaning that rooftops, concrete, and compacted soils allow rain to run off rather than soaking into the soil. This runoff carries pollutants to our streams and increases flash flooding. Rain gardens can slow the movement of the rainwater to compensate for impervious surfaces in our watersheds.

### *What is a rain garden?*

*A rain garden is a shallow, planted depression which holds water during and immediately following rain storms. The water is absorbed into the soil rather than flowing more quickly into the stormwater system and nearby streams.*

Rain gardens come in all shapes and sizes, but they have a few things in common:

- ◆ **A SOURCE OF WATER**  
Many landowners direct their downspouts into a rain garden or plant their garden where it can catch runoff from a parking lot or driveway.
- ◆ **THE ABILITY TO HOLD WATER**  
Rain garden basins can pool to depths of 4 to 8 inches, depending on the soil. Water in the garden should soak into the soil within 24 to 48 hours.
- ◆ **THE ABILITY TO ABSORB WATER**  
The point of the garden is to allow rain water to soak in, so it is important to have un-compacted soil.
- ◆ **AN OVERFLOW**  
No matter how big we make a rain garden, nature can fill it with water. The overflow may be a seepage area or a low spot along one side that is reinforced with stone or fabric to prevent erosion.
- ◆ **PLANTS**  
Missouri native plants are recommended because they are adapted to local conditions, have deep root systems which improve soil, and attract native wildlife.

### YOUR RAIN GARDEN: PLANNING

Rain gardens take a bit of planning, particularly to find the right location and the right plants. How big should it be? How many plants do I need? What kind of plants should I grow?

When it comes to size, consider the available space and the level of effort you can manage. As a starting point, estimate the area of impervious surfaces that will drain into the garden. Divide by 5 to estimate an appropriate size for your garden.

The number of plants needed depends on the size of the plants and how dense

(continued on back)

Photo by Danelle Haake



Water can be directed into the rain garden over the ground or in pipes.

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you want your rain garden to be. If you are using small plants or you want the garden densely filled the first year, place plants 12 inches apart; that is one plant for each square foot of garden. If you are using larger plants or you want a bit of room between them, 24 inches apart would be preferable; that is one plant for every four square feet of garden.

The plants you select for your garden will depend on how much sun your garden receives and on your preferences for plant height and flowering. It is important to balance having a diverse garden that blooms in many seasons and a garden with so many unfamiliar types of plant that you can't tell which seedlings are weeds. For this reason, limit yourself to no more than 3 or 4 species you do not already recognize. As you become familiar with these species, you can always add more!

### YOUR RAIN GARDEN: CREATING

**N**ow that you have a plan (and you have called Dig Rite to make sure there are no utility lines in your way), start

digging! You will need a level to ensure that the edges of your rain garden are even and that your overflow is lower than the rest of the edges. Try to reserve your topsoil to use in the basin of your rain garden or for another garden project.

Once your basin is dug, you may want to add compost to the soil. Then plant your garden and add a layer of mulch. You can create your rain garden any time of year, but the best time to plant native species is in spring or fall.

### YOUR RAIN GARDEN: MAINTAINING

**T**here is no such thing as a no-maintenance garden, but rain gardens are pretty close. Once the plants are established, they should not need to be watered. If you plant native species, do not add fertilizer. You may add compost or mulch as desired. In late winter or early spring, remove the previous season's dead foliage, pull weeds as needed, and know that every time it rains, you are contributing to the preservation of our streams!



### Locate your rain garden . . .

- ◆ At least 10 feet away from the foundation of the house.
- ◆ Downhill from the downspout.
- ◆ In part-to-full sun (if possible).
- ◆ Away from septic systems.
- ◆ Away from utilities. Call before you dig: 1-800-DIG-RITE.

Photo by Carol Boeckmann



A freshly composted rain garden.

Photo by Danelle Haake



A newly planted rain garden (foreground) beside a rain garden planted four years earlier.

Don't forget to send your questions to [streamteam@mdc.mo.gov](mailto:streamteam@mdc.mo.gov) or call 1-800-781-1989.

### Additional Resources:

**RainScaping Guide:** Missouri Botanical Garden's comprehensive guide to landscaping practices that benefit our streams, including rain gardens.  
<http://www.mobot.org/rainscaping>

**Rain Gardening and Storm-water Management: A Landscaping Guide for Missouri:** Shaw Nature Reserve's guide includes instructions, layouts, and great plant lists.  
<http://www.missouribotanicalgarden.org/Portals/0/Shaw%20Nature%20Reserve/PDFs/horticulture/NLM%20Ch2.pdf>

The University of Nebraska's exceptional interactive look at the layout and function of a rain garden.  
<http://water.unl.edu/landscapes/rain-gardens>