



# Rain Gardens

## Preserving Your Community's Water

### What is a rain garden?

A rain garden is a garden of native shrubs, perennials, and flowers planted in a small depression, which is generally formed on a natural slope. It is designed to temporarily hold and soak in rain water runoff that flows from roofs, 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 wetland, rather it 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.

### 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 EPA estimates that pollutants carried by rainwater runoff account for 70% 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 is the difference between a rain garden and a traditional garden?

In the design of a rain garden, typically six to twelve inches of soil is removed and altered with tillage, compost and sand to increase water infiltration. The type of alteration to the soil depends on the current soil type, so it is a good idea to obtain a soil test.

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 after a major rainfall. Also, rain gardens incorporate native vegetation; therefore, no fertilizer is needed and after the first year, maintenance is usually minimal.

### What benefits do rain gardens provide to my community?

- Improves water quality by filtering out pollutants
- Aesthetically pleasing
- Preserves native vegetation
- Provides localized stormwater and flood control
- Attracts beneficial birds, butterflies and insects
- Easy to maintain after establishment
- Opportunity to raise water quality awareness in your community

### What is the average size and placement of a rain garden?

A rain garden should have an area about 20% the size of the roof, patio, or pavement area draining into it. A typical rain garden for a residential home or small building is between 100 and 400 square feet. Regardless of the size, big or small, each rain garden can make an impact.

Rain gardens are shaped longer than they are wide and positioned perpendicular to the slope of the land in order to catch the maximum amount of rainfall. Rain gardens should be placed at least 10 feet away from building foundations and should not be located where water ponds for an extended period of time.

## What types of plants are used?

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.

Avoid planting trees, 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 is the cost to design and install a rain garden?

The cost of a rain garden is dependant on the property's soil type, the size of roof/driveway/patio draining into a rain garden, and the types of plants chosen. If the soil is high in clay content, it may be a good idea to install an under drain system to prevent standing water in the rain garden for more than 48 hours.

For a self-built rain garden, expect to pay between \$3 and \$5 per square foot in plant costs and soil amendments. Digging the garden is the most time consuming task, as 6-8 inches of soil depth is typically removed to add amendments.

When working with a landscaping company to design and install a rain garden, the cost will significantly increase to around \$10 to \$12 per square foot.



## What kind of maintenance does a rain garden require?

Rain gardens do not require fertilizer if native vegetation is used. During the first few years after the installation of a rain garden, the weeds will need to be removed periodically. After the plants in the rain garden have become established and grown larger, they will eventually out-compete the weeds.

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 will be necessary.



The Demonstration Rain Garden Workshop Project is funded by the US Environmental Protection Agency's Clean Water Act Section 319 as facilitated by the Nebraska Department of Environmental Quality.

## Demonstration of a Rain Garden at the Hastings Museum and Cody Park

The Groundwater Foundation provided Hastings, Nebraska and North Platte the opportunity to take control of their water quality through the installation of a professionally designed demonstration rain garden and a one-day educational workshop for area residents.

The workshop, designed for homeowners, provided participants with the knowledge, motivation, and take-home resources to help them plan and install their very own rain garden.

The goal of the project was to increase the number of rain gardens present in Nebraska. While one rain garden alone cannot solve the state's water quality issues, hundreds scattered across the state can make a measurable difference.

*Thinking of installing a Rain Garden? Let us know! We'd be interested in your comments, the success of your barrel, and pictures. Please send information to your local, on the contact us tab.*



*For more information on rain gardens, please visit:  
[www.NebraskaH2O.org](http://www.NebraskaH2O.org)*