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Rain Garden Inspection and Maintenance

Water Resources Program

RUTGERS
New Jersey Agricultural Experiment Station

New Jersey Marine Sciences Consortium
Sea Grant New Jersey

Applying knowledge to improve water quality
Northeast States & Caribbean Islands Regional Water Program
A Partnership of USDA CSREES & Land Grant Colleges and Universities

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Rain Garden Maintenance

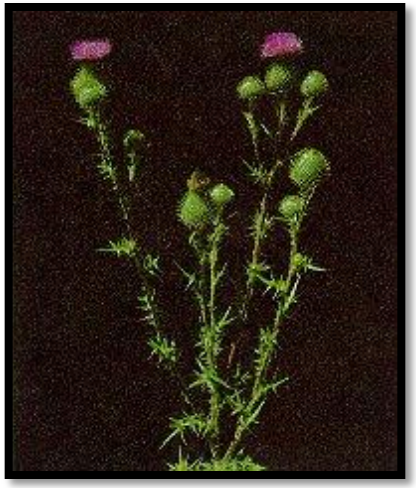
Rain gardens are low maintenance gardens,
not no maintenance gardens!

Maintenance Measures

1. Inspections
2. Watering
3. Landscape Fabric and Mulch
4. Soil Testing
5. Weeding
6. Pruning
7. Mowing
8. Sediment removal as necessary
9. Cleaning of Gutters
10. Re-planting as necessary
11. Harvesting Plants
12. Prepare a Photo Journal

1. Inspections

- What am I inspecting for?
  - Weeds and invasive plants
  - Plant health
  - Excessive sediment
  - Movement of sediment within the rain garden



1. Inspections

- When am I inspecting?
  - Prior to growing season
  - End of growing season
  - After large storm events
  - During weather extremes

1. Inspections

Observe the rain garden during rain events and note any problems or successes

Walnut Avenue Elementary School, Union County

Problem: Gullying after rain event

Solution: Add a berm and/or plants

Hanson House/Hanson Park Conservancy, Union County

Success: Withstood rain event

1. Inspections

- Rain Garden Site Visit Worksheet (Post-Installation)

Name(s): _____

Stormwater Management in Your Backyard

Rain Garden Site Visit Worksheet (Post-Installation)

Part I: The Basics

Rain Garden Name	
Rain Garden County	
Date	
Current Weather	
Did it rain yesterday? (please check) If yes, how many inches?	_____ Yes _____ No _____ inches (This can be checked at http://www.wunderground.com/)

Part II: Site Contact Interview

Site Contact Name	
Site Contact Title	
Site Contact E-mail Address	
In the past year, has there been a special event at or around the rain garden? If yes, how many people attended and was the press media at the event (ask for copies of newspaper articles)?	
In the past year, did you arrange for any workshops or special educational events near or around the garden? If yes, provide details.	
How many people on average casually visit the rain garden on a given day?	
How many people on average ask for more information about the rain garden after visiting the site?	
Has any rain garden visitor said that they intend to install a rain garden on their own property? If yes, how many visitors?	
Has any rain garden visitor said that they intend to install a rain garden at a school or other public building in their community? If yes, how many visitors?	
Who currently maintains the rain garden?	
What maintenance has been performed so far, if any?	
Are there any difficulties with maintaining the rain garden?	
How does the rain garden handle large/intense storms? (Rain gardens should infiltrate stormwater within 24 hours)	
Do you have plans to install more rain gardens?	

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2. Watering

New rain gardens will need to be watered for the first one or two years until the garden is established!

3. Landscape Fabric and Mulch

3. Landscape Fabric and Mulch

- Apply mulch twice per year until groundcover establishes.

4. Soil Testing

- Soil should be tested every 3 years.
- pH should be in an acidic range
  - If pH is <5.2, apply limestone
  - If pH is >7.0 to 8.0, add aluminum sulfate or sulfur to reduce pH according to recommendations.
- Soil amendments should only be added when no storms are expected.
- Refer to RCE Fact Sheet 797, download from: http://njaes.rutgers.edu/pubs/

NEW JERSEY AGRICULTURAL EXPERIMENT STATION
RUTGERS COOPERATIVE RESEARCH & EXTENSION

Fact sheet

FS797

For a comprehensive list of our publications visit www.rce.rutgers.edu

Soil Testing for Home Lawns and Gardens

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Soil testing can provide information about how to enhance the beauty and productivity of a lawn, landscape planting, or vegetable garden. Whether your goal is a plush, green lawn or a large harvest of vegetables, soil fertility testing is the place to start. It helps by determining a soil's need for lime and fertilizer. Regular soil tests are also a part of a sound environmental management plan for your home and garden. Proper soil and fertility management will reduce the potential for water contamination from fertilizers. By knowing the plant nutrition needs of your lawn and gardens, you can prevent the overapplication of fertilizers, which may result in excess nutrients reaching streams or groundwater.

When to Sample

The best time to take a soil sample is after harvest in the fall or before spring fertilization. Do not sample shortly after a lime, fertilizer, or manure application or when the soil is excessively wet. For lawns, late summer sampling will prepare you for fall fertilization. Soil testing should be repeated every 2–3 years.

Where can I get a soil test kit?

Soil test sampling kits are available for a fee from most of Rutgers Cooperative Extension's county offices, which are listed in the blue pages of your telephone book under county government. Kits are also available from the Rutgers Soils Laboratory, located at the Cook College Campus in New Brunswick. Separate soil samples will need to be taken from areas used to grow different types of plants. For example, separate soil test kits should be used for lawn areas and vegetable garden areas. Samples from rhododendron, azalea, and other broadleaf evergreen areas should be kept separate from other shrub areas. Also sample separately areas that have previously received different lime or fertilizer treatments and areas that are noticeably different in plant or soil quality. For further information, visit our web site, *www.rce.rutgers.edu/soiltestinglab*.

How to take a soil sample

The Rutgers Soils Laboratory uses state-of-the-art instruments and methods of soil analysis. The soil test, however, can only be as good as the soil sample collected, so it is very important to use proper sampling techniques. The objective of sampling is to collect a random sample that will best represent the average fertility of the sample area. Depending on the size of the area to be sampled, collect about 10 to 15 cores or slices of soil while walking in a random pattern over the area to be tested.

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5. Weeding

- Weeding more often will limit the amount of time you will have to spend weeding
- Watch for overly-competitive species
- Some weeds can be aggressively spreading underground by rhizomes

5. Weeding

Be on the lookout for these invasive species in your rain garden:

Photo by Betty Ann Kelly

Wisteria

Photo by Betty Ann Kelly

Japanese Knotweed

5. Weeding

Be on the lookout for these invasive species in your rain garden:

Thistle

Photos by Betty Ann Kelly

Wild Cucumber

Photos by Betty Ann Kelly

6. Pruning

- Pruning directs growth of plants, improves health, and increases production of flowers and fruits.

- How does pruning a rain garden differ from my other gardens?
  - In a rain garden, dense shrub growth is encouraged to provide increased filtering capacity.

6. Pruning

- Tattered and discolored plants should be cut back after spring arrives and growth is 4-6” tall.

- “Deadheading” plants will also lead to succeeding new growths.

- THINNING: basically, thinning out. This type of pruning removes entire braches back to the main trunk or major branches to the ground.
  - Expected result: large, open shrub

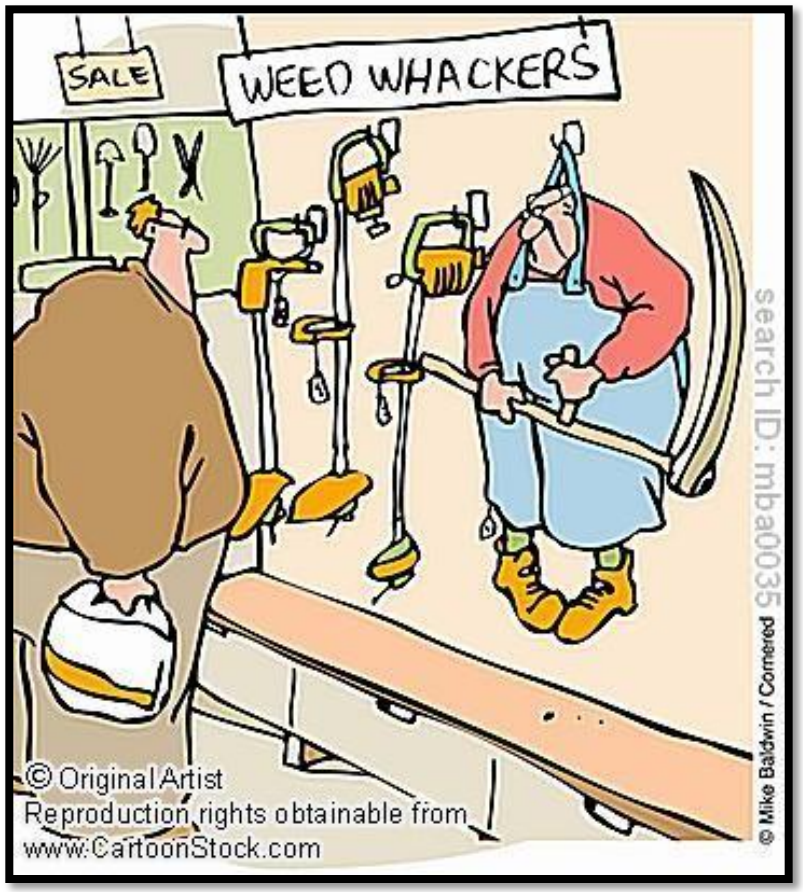
- HEADING: also known as heading back. This type of pruning removes only part of a branch.
  - Expected result: growth of multiple branches in place of single branch, thus a more dense shrub.

7. Mowing

- After the growing season, it will be necessary to remove stems and seedheads. These can be left for habitat and in some areas, aesthetics.

- A string trimmer can be used to maintain over-competitive growths.

- Dead plant materials can also be removed by a string trimmer or mower, if the mowing deck can be raised to cut at 6-8”.



7. Mowing

- Mowing native grasses should occur two times a year in your rain garden.
  - Initial mowing can be done after the first few weeks of growth – early Spring.
  - Final mowing can be completed after ground nesting birds have hatched the next generation usually near mid-May

Rain gardens can provide winter interest!

8. Re-Planting as necessary

- After the first season, it may be obvious what plants were successful and what plants do not work for your rain garden.
  - Over the growing season, was the weather drastically different than the conditions the basin was designed to retain?
  - Was flow too fast through the basin, damaging health?
  - Is flow being incorrectly diverted from the rain garden?

Photo by Linda Brazaitis

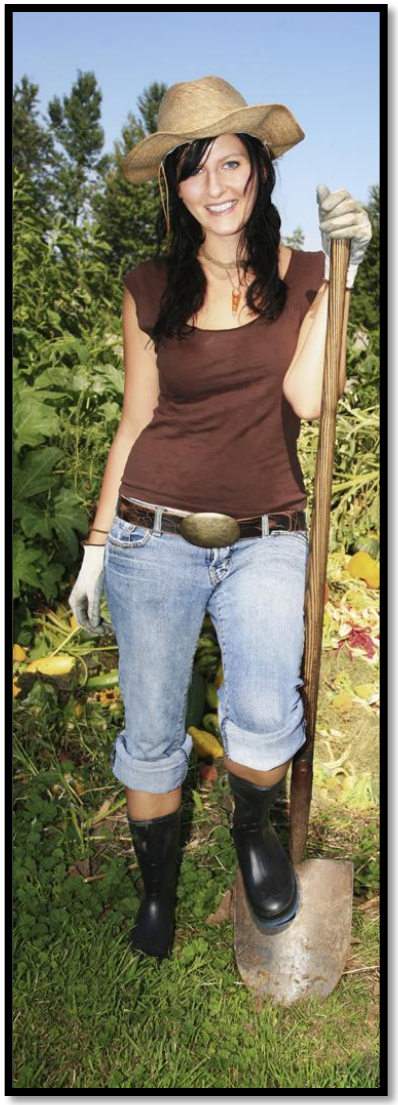
8. Re-Planting as necessary

- Replace dead or diseased plant material
- Re-seed the berm if there are areas of exposed soil
- Replace rocks that may be diverting flow out of the garden
- Build up areas where more protection is needed

9. Sediment Removal as necessary

- Since the rain garden serves the purpose of catchment, sediment will tend to accumulate within the garden.

- This is a sign of success – this soil would have been directed straight to the local waterways without your efforts!



9. Sediment Removal as necessary

- With a flat shovel, remove soil that has accumulated in the basin. Avoid the vegetation!

- There is no exact schedule for when this should be done. Try to monitor sediment accumulation, especially after all heavy storm events.

- Be sure that sediment is not churning up from exposed areas of the rain garden. Flow should be dissipated to avoid these situations, which are likely to occur in the early stages of stabilization.

- Core aerate or cultivate bare areas annually if surface becomes clogged with fine sediments.

10. Cleaning of Gutters

- Make sure rain gutters are clear of debris.
- If the flow of water is blocked in the gutter, the rain water will have difficulties getting to your rain garden.

11. Harvest Plants

- Collect seeds and cuttings from successful plants in the rain garden and use them for the new season.

- Plant more of the successful species in the rain garden as necessary.

12. Prepare a Photo Journal

Take photographs from the same location for consistency

Fanwood Memorial Library, Union County

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Fanwood Memorial Library,
Union County

Take photographs from the same location for consistency