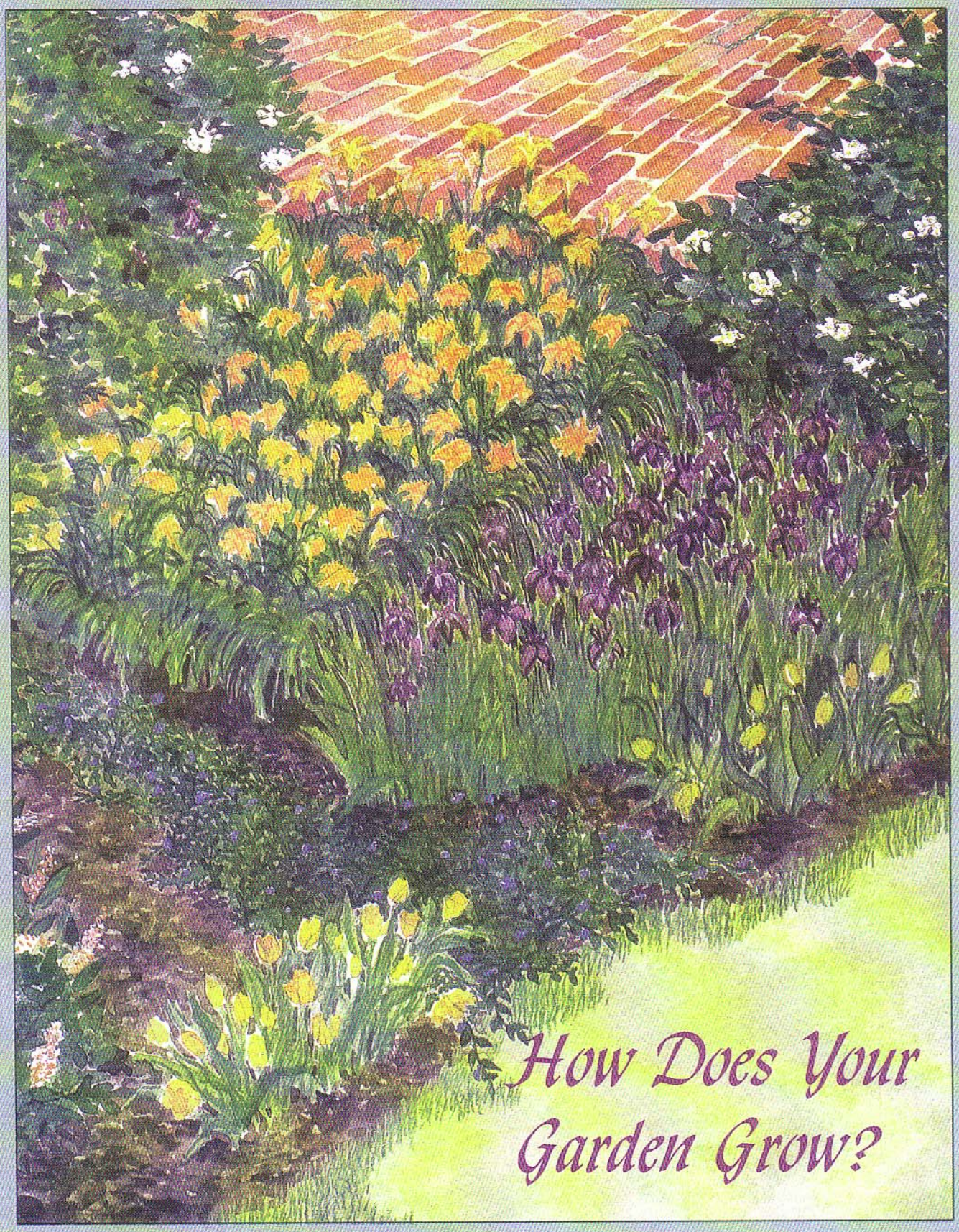

How Does Your Garden Grow?

A Reference Guide to Enhancing your Rain Garden

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- *For specific questions or technical information on bioretention, please call the Prince George's County Department of Environmental Resources at (301) 883-5833.*

- *For general landscaping and lawncare information, call the Maryland Home and Garden Information Center at (800) 342-2507.*

Glossary

Blade	*the expanded part of a leaf*
Capsule	*a dry compound fruit, with more than one compartment for seeds*
Catkin	*a soft hanging cluster of flowers*
Cluster	*a more or less loosely arranged group of flowers or leaves*
Deciduous	*a tree or shrub that loses its leaves in the fall*
Drupe	*a soft fruit containing seeds with hard coats*
Frond	*the leaf of ferns*
Panicle	*a loose and irregular flower cluster*
Pod	*a fruit, such as that of the pea plant, that splits open when dry*
Samara	*a winged fruit*
Spike	*an elongated cluster of flowers*
Taproot	*a long, central root*

Helpful Tips for Enhancing and Protecting your Rain Garden

- In order to maintain its water quality protection benefits, the following items should **NEVER** be put into your Rain Garden:

  - Compost
  - Fresh grass clippings
  - Animal waste
  - A different soil mixture
  - Plants that prefer dryer conditions
  - Pool water

- Avoid exotic or invasive plant species that could be harmful to adjacent natural plant communities.

- Do not use plants that will not survive in wetter conditions in the lower elevations of your Rain Garden. The plants will die, reducing the effectiveness of your Rain Garden and causing costly replacement.

- Plant annuals and bulbs at the outer edges of your Rain Garden, as these plant species generally prefer a drier environment. Select perennials over annuals to save time replanting each spring.

- If other areas of your yard tend to collect stormwater, add wet soil-tolerant plant species to those areas as well.

- Select native plant species over ornamental plant species. Native species are hardy and well adapted to this region (refer to the plant list in this handbook).

- Select species that produce flowers and fruit. Birds, butterflies, and animals are attracted to these species. Refer to the recommended plant list for species that attract wildlife.

- Bird feeders placed at the edge of your Rain Garden will attract birds and provide many hours of viewing pleasure.

- A diversity of plants (trees, shrubs, perennials, annuals, and ground covers) is the most effective way to attract wildlife to your Garden. Layers of plants (canopy, understory, ground cover) will provide cover, food, and nesting sites for a greater diversity of wildlife species.

Special Requirements for Rain Gardens

Plant Troubleshooting

- Plants in the wettest zone (low point) of your Rain Garden were specifically selected for their ability to withstand periodic temporary ponding. Ice is common in the winter and should not damage your plants. If ice damage occurs, select hardier plant species, as recommended by your local garden center.

- The failure of several plants in one area may indicate too much or too little water, or that the plants are unsuitable for that zone. Refer to the plant lists to determine if the species prefer wetter or drier conditions, and replace dead plants with ones more suited to that zone.

Ponding and Drainage

- Inspect your Garden after rainstorms to ensure that drainage paths are free from obstruction, and that ponding water levels dissipate over time.

- Water will pond for longer durations in winter and early spring—wetter times of the year when plants are not transpiring water. If ponding occurs throughout the Garden, contact Prince George's County (phone numbers listed inside back cover) for technical assistance.

- Look for the following signs of physical stress if plants are too wet:
  - wilting
  - yellowing of leaves
  - ringed spots on leaves
  - a soft or rotting plant base

- If erosion is occurring at the drainage paths, you may try to stabilize the erosion using sod or small stones (1-2" in diameter); or, contact Prince George's County for technical assistance.

- If you notice that ponding does not occur or that plants are dying, your Rain Garden may be too dry, and you may need to water more frequently. If plants continue to die, contact Prince George's County for technical assistance.

Soil

- If you notice that water is not dissipating and plants begin to die, your Garden may not be functioning properly. You may try adding an additional 2-3" of sandy top soil to reduce ponding levels; or, contact Prince George's County for technical assistance.

Safety

- Your Rain Garden has been designed to create a water depth of six inches or less that will dissipate within 1-2 days. Do not walk or mow in these areas.

- Be careful not to drag electrical equipment like weed-whackers or lawn-mower cords through the wet area.

- As with any area that contains water, take precautions with small children.

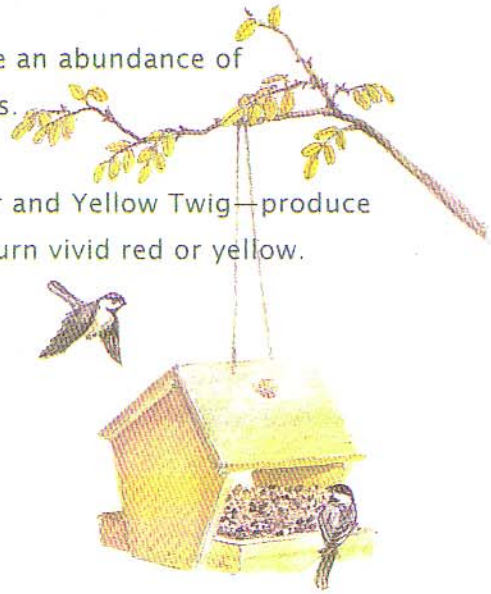
winter

Care

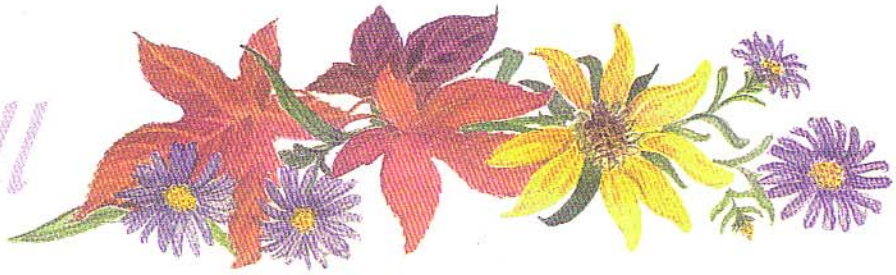
- Cut back ornamental grasses that were still in bloom in late fall.
- Ground covers and flowers require no maintenance during this time.
- During wetter periods—winter and early spring—plants are dormant, the soil may be frozen, and your Garden ponds water for longer periods of time.

Highlights

- Witch Hazel, a small tree, produces yellow blooms in early February.
- Holly trees and shrubs retain handsome, dark green foliage, and produce brilliant red berries that last until spring.
- Deciduous hollies like Sparkleberry produce an abundance of red fruit and create eye-catching silhouettes.
- Two shrub varieties of Dogwood—Red-osier and Yellow Twig—produce striking color in the winter as their stems turn vivid red or yellow.
- Many varieties of ground covers add interesting texture.
- A bird feeder hanging in your Garden is an attractive addition.



fall



Care

- Cut perennials back to the ground after they begin to turn brown (following the first frost).
- Remove annuals.
- Plant new trees and shrubs, as long as the soil temperature remains above 32° at a depth of six inches—usually until November 15th in this area.
- Place fall perennials like Mums or Asters in the drier areas of your garden. Prepare for spring by adding bulbs to these dry areas as well.
- After removing annuals and trimming back perennials, mulch all trees and shrubs. This helps to condition the soil for spring, keeps soil temperatures warm so roots can continue to develop, and adds beauty to your Garden. Add two to four inches of well decomposed grass clippings or shredded hardwood mulch to your planting beds and around the bases of trees. Mulch should cover your Rain Garden uniformly; soil should be not be exposed. Mulch should not be more than six inches deep.

Highlights

- Fall foliage: Red Maples and Sweet Gums are particularly spectacular.
- Ornamental grasses are in full bloom.
- Shrubs such as Holly, Dogwood, and Viburnum begin to produce colorful berries.

summer

Care

- During times of extended drought—July and August—water your Rain Garden as you would any other garden (every seven to ten days, if it has not rained). Look for the following physical features of stress if plants are too dry:

  - wilting
  - yellowing of leaves
  - brown, dry leaves
  - leaves dropping off
  - ringed spots on leaves
  - smaller leaves
  - fewer leaves

- Water your Garden in the early morning for several hours with a soaker hose, giving the Garden a gentle soaking, and providing plants with a better chance of retaining moisture. Do not water your plants during the day or evening; humidity is highest and some of the water will evaporate before the plants have a chance to absorb it. Do not water at night, as this promotes conditions for disease and fungus.

- Check trees and shrubs for any signs of disease or insect pests. Inspect leaves for unusual holes—a sure sign that insects have been chewing. Also check the underside of leaves for filmy or powdery deposits. Most plant diseases and damaging insects, like scale and lacebug, can be easily treated when detected early.

- Weed your Garden regularly to keep it healthy and beautiful. If you have an infestation of weeds that are not easily removed, ask a horticulturist for advice as to an environmentally safe herbicide.

Highlights

- A variety of annuals and perennials bloom from early to late summer, including Daylilies, Iris, Black-Eyed Susans, Spirea, and Goatsbeard.

Seasonal Care of your Rain Garden

The following sections provide seasonal information about enhancing your Rain Garden. Included are helpful maintenance tips, as well as plants that will be particularly noticeable during each season.

spring

Care

- Prune all deciduous trees and shrubs—those that lose their leaves in the fall—in early to mid-March before leaves appear.

- Prune flowering trees and shrubs after they have finished blossoming (usually in early June), allowing the plant to have plenty of time to develop new flower buds for next spring.

- Divide ornamental grasses and perennials as soon as the soil becomes soft enough to work with a shovel. Use a pointed garden spade to dig up perennials such as Hostas, Black-Eyed Susans, and Liriope. Gently divide the plant into two or three clumps, making sure to get enough of the roots with each clump. These clumps are new plants—relocate as desired. Divide every two to three years to keep plants healthy.

Highlights

- Flowering trees and shrubs such as Dogwood and Viburnum.
- Flowering ground covers, including Ajuga.

Special Note: Most annuals and bulbs will not do well in damp or saturated soil conditions. Because of the moisture of the soil in your Rain Garden—especially when it rains—these plants should be avoided or carefully located in the dry areas near the outer edges of your Garden.

Foliage	Exposure	Native Plant	Wildlife Value	Height	Root System
Basal, long, thin	Partial shade	Yes	High	1'-3'	Shallow
Lance-shaped	Full to partial sun	Yes	High	2'-3'	Shallow
Lance-shaped	Sun to partial shade	Yes	High	0.5'-1.5'	Shallow
Oval	Partial to full shade	Yes	Medium	0.5'-1.5'	Shallow
Long, narrow	Partial sun to shade	Yes	Medium	0.5'-3'	Shallow
Narrow, lance-shaped	Sun	Yes	High	2'-4'	Shallow
Deeply divided	Full sun	Yes	Medium	2'-8'	Shallow
Leaf divided into leaflets	Sun to partial shade	Yes	Medium	3'-7'	Shallow
Toothed leaves	Sun to partial shade	Yes	Medium	2'	Shallow
Erect, curling flat blades	Sun	Yes	High	3'-6'	Shallow
Flat, linear	Sun	No	Medium	1'-3'	Shallow
Flat or folded	Sun	Yes	Medium	1'-2'	Shallow
Yellow or white striped	Sun	Yes	High	1'-2.5'	Shallow
Dense, grassy clumps	Sun to partial shade	Yes	Medium	1'-4'	Shallow
Oval, green or purple	Sun to partial shade	No	Medium	0.5'-1'	Shallow
Shining green	Sun to partial shade	No	Low	0.5'	Shallow
Dark green grass-like	Sun to shade	No	Low	0.5'-1'	Shallow
Large, broad	Shade	Yes	High	3'	Shallow
Long, tapering	Sun to partial shade	Yes	Medium	1'-1.5'	Shallow

Species	Water Tolerance	Form	Flowers/Season	Fruit
Wild Bleeding Heart *Dicentra eximia*	Medium	N/A	Pink/April-October	N/A
Bee Balm *Monarda didyma*	Medium	N/A	Scarlet/Summer	N/A
Wild Mint *Mentha arvensis*	High	N/A	Lilac/June-October	N/A
Virginia Bluebell *Mertensia virginica*	Medium	N/A	Blue/April-May	N/A
Spiderwort *Tradescantia virginiana*	Medium	N/A	Blue/April-July	N/A
Swamp Milkweed *Asclepias incarnata*	High	N/A	Dull pink/June-August	N/A
Queen-of-the-Prairie *Filipendula rubra*	Medium	N/A	Pink/June-July	N/A
Goatsbeard *Aruncus dioicus*	Medium	N/A	Creamy white/Early Summer	N/A
White Gloria *Astilbe* sp.	High	N/A	White/June-July	N/A
Grasses and Sedges				
Switch grass *Panicum vigatum*	High	N/A	Green/July-September	N/A
Redtop *Agrostis alba*	Medium	N/A	Loose clusters/Summer	N/A
Tufted Hair Grass *Deschampsia caespitosa*	High	Dense	Loose clusters/Summer	N/A
Ribbon Grass *Phalaris arundinacea*	High	N/A	Thin clusters/Summer	N/A
Tussock Sedge *Carex stricta*	High	N/A	Green/May-August	N/A
Ground covers				
Mountain Stonecrop *Sedum ternatum*	Medium	N/A	White/April	N/A
Moss Phlox *Phlox Subulata*	Low	N/A	May/Pink, Blue, White	N/A
Lily-turf *Liriope* sp.	Medium	Tufted clumps	Whitish, blue, or violet/ early summer	N/A
Ferns				
Cinnamon Fern *Osmunda cinnamornea*	Medium	Leafy cluster	Brown fronds/early summer-fall	N/A
New York Fern *Thelypteris noveboracensis*	Medium	Leafy cluster	Green fertile fronds/ June-September	N/A

Foliage	Exposure	Native Plant	Wildlife Value	Height	Root System
Spring: green Summer: medium green Fall: orange-red to purple	Sun to shade	Yes	High	8'-10'	Shallow
Spring: medium green Summer: green Fall: yellow-green	Sun to partial sun	Yes	High	6'-12'	Shallow
Spring: green Summer: dark green Fall: yellow-green	Sun to partial shade	Yes	High	6'-12'	Shallow
Spring: light green Summer: dark green Fall: yellow	Shade	Yes	High	6'-12'	Deep
Spring: green Summer: medium green Fall: red to purple	Sun to partial shade	Yes	High	6'-8'	Shallow
Spring: green Summer: dark green Fall: yellow	Sun to partial sun	Yes	Medium	4'-8'	Shallow
Spring: light green Summer: green Fall: yellow	Sun to shade	Yes	Low	6'-12'	Shallow
Spring: medium green Summer: olive green Fall: yellow-green	Sun	Yes	Medium	3'-6'	Shallow
Spring: green Summer: medium green Fall: bronze to red	Sun to partial shade	Yes	High	6'-10'	Shallow
Spring: light green Summer: shiny green Fall: yellow, orange, red	Sun to partial shade	Yes	High	10'-20'	Shallow
Linear	Full to partial sun	Yes	Medium	2'-5'	Shallow
Long, thin	Full sun	Yes	Medium	2'-4'	Shallow
Bushy (*Caution:* spreads very quickly)	Sun to partial shade	Yes	Medium	2'-4'	Shallow
Lance-shaped	Sun	Yes	High	1'-3'	Shallow
Lance-shaped	Sun	Yes	High	1'-3'	Shallow
Lance-shaped	Sun to partial shade	Yes	High	1'-5'	Shallow

Species	Water Tolerance	Form	Flowers/Season	Fruit
Red-osier Dogwood *Cornus stolonifera*	High	Arched spreading	White/May-June	White berry-like drupes
Inkberry *Ilex glabra*	High	Upright dense (deciduous)	Green to white clusters/May-June	Black berry-like drupes
Winterberry *Ilex verticillata*	High	Spreading (deciduous)	Green to white small clusters/June	Red berry-like drupes
Spicebush *Lindera benzoin*	High	Upright	Yellow clusters/April	Red berry-like drupes
Withe Rod *Viburnum cassinoides*	High	Rounded compact	White clusters/June	Dark blue berry-like drupes
Sweet Pepperbush *Clethra alnifolia*	Medium	Oval dense	White spikes/August-September	Brown capsules
Witch Hazel *Hamamelis virginiana*	Medium	Vase-like compact	Yellow/October-November (also winter)	Brown fuzzy capsules
Bushy St. John's Wort *Hypericum densiflorum*	Medium	Oval	Yellow/July-September	Red-brown to purple capsules
Arrow-Wood *Viburnum dentatum*	Medium	Upright multi-stemmed	White clusters/May-June	Dark blue berry-like drupes
Nannyberry *Viburnum lentago*	Medium	Upright multi-stemmed	White clusters/May	Blue/black berry-like drupes

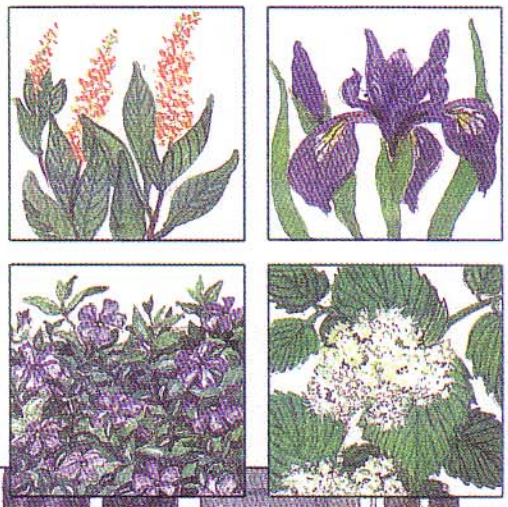
Perennials and Annuals

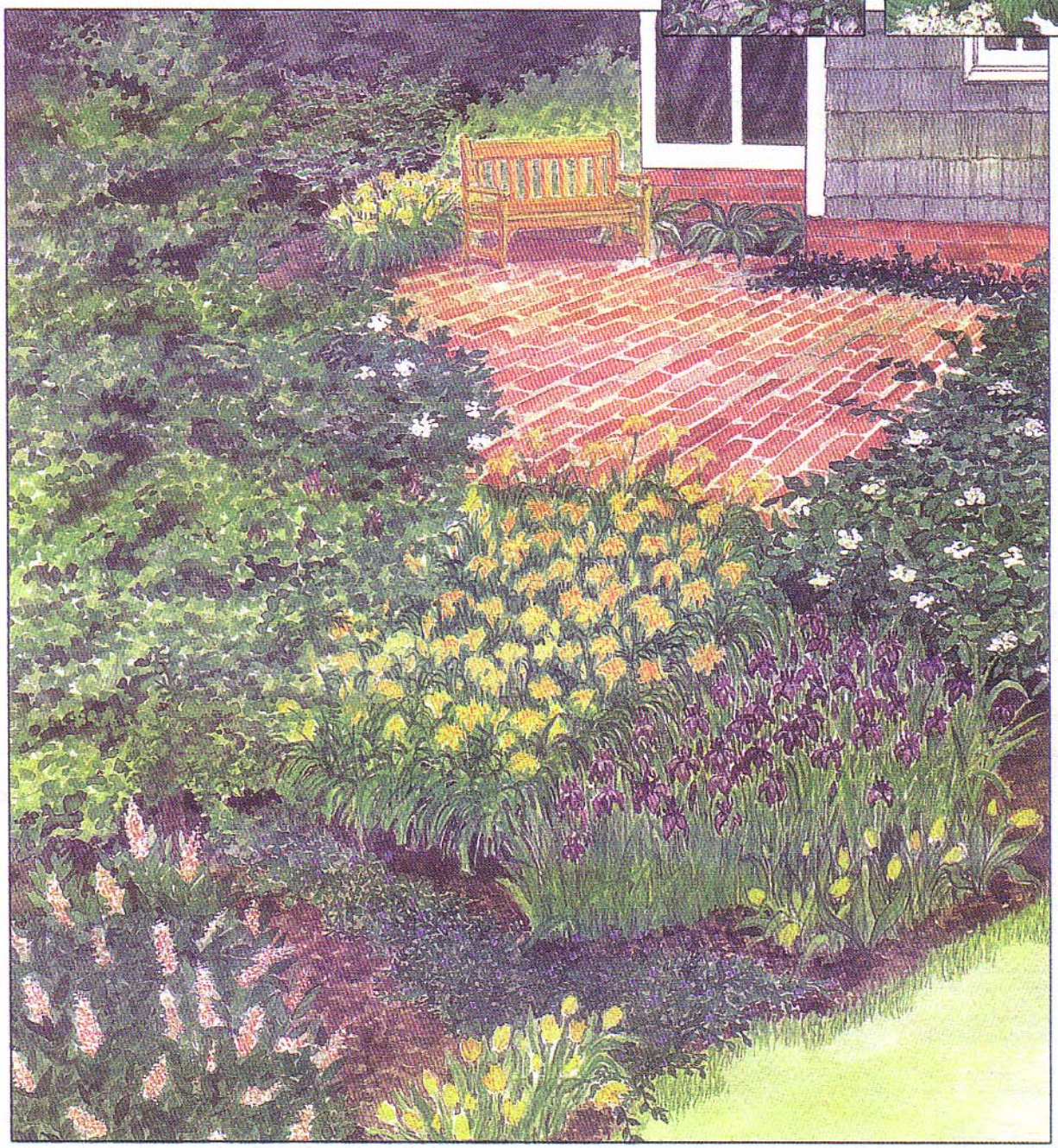
Blazing Star *Liatris spicata*	Medium	N/A	Deep purple/Late summer-early fall	N/A
Iris *Iris versicolor*	High	N/A	Deep blue/Early summer	N/A
Obedient Plant *Physotegia Virginiana*	Medium	N/A	Pink/August-October	N/A
New York Aster *Aster novae-belgii*	High	N/A	Deep violet/July-October	N/A
Tickseed Sunflower *Bidens aristosa*	High	N/A	Yellow/August-October	N/A
Cardinal Flower *Lobelia cardinalis*	High	N/A	Scarlet/July-October	N/A

Foliage	Exposure	Native Plant	Wildlife Value	Height	Root System
Spring: light green Summer: green Fall: red, orange, yellow	Sun to shade	Yes	High	60'-90'	Shallow
Spring: yellow-green Summer: green Fall: yellow	Sun	Yes	High	50'-70'	Shallow
Spring: light green Summer: dark green Fall: yellow to orange	Sun	Yes	Low	50'-75'	Shallow
Spring: light green Summer: bright green Fall: red to purple	Sun	Yes	Low	75'-100'	Taproot
Spring: light green Summer: bright green Fall: yellow	Sun	Yes	High	75'-100'	Shallow
Spring: purplish green Summer: dark green Fall: brown to red	Sun to partial shade	Yes	High	60'-75'	Shallow
Spring: green Summer: dark green Fall: red to brown	Sun	Yes	High	50'-90'	Shallow
Spring: light green Summer: bright green Fall: yellow-purple	Sun to shade	Yes	Low	75'-90'	Shallow
Spring: light green Summer: green Fall: yellow	Sun	Yes	Low	50'-75'	Taproot
Spring: light green Summer: dark green Fall: bright red	Sun	Yes	Medium	50'-100'	Taproot
Spring: light green Summer: bright green Fall: tan-brown	Sun to partial shade	Yes	Low	75'-100'	Shallow
Spring: green Summer: bright green Fall: scarlet	Sun	Yes	High	50'-75'	Taproot
Spring: blue-green Summer: dark green Fall/winter: yellow-brown	Sun	Yes	High	40'-60'	Taproot
Spring: silvery gray Summer: yellow-green Fall/winter: red	Partial sun to shade	Yes	High	35'-50'	Shallow
Spring: blue-green Summer: dark blue-green Fall/winter: yellow-green to yellow	Sun	Yes	Low	50'-75'	Shallow

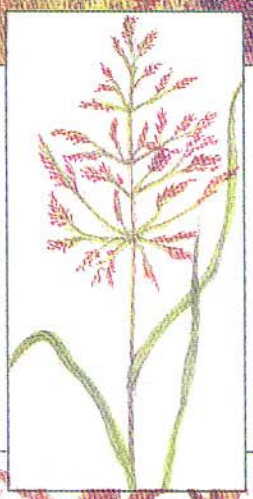
Species	Water Tolerance	Form	Flowers/Season	Fruit
Red Maple *Acer rubrum*	High	Oval	Red/early March-April	Red paired samaras
River Birch *Betula nigra*	High	Oval	Yellow-green catkins/ April-May	Tan/brown winged nutlets
Green Ash *Fraxinus pennsylvanica*	High	Irregular oval	Loose, purplish clusters/April-May	Tan/brown samaras
Sweet Gum *Liquidambar styraciflua*	High	Conical, oval	Yellow-green clusters/April-May	Tan/brown woolly balls
Eastern Cottonwood *Populus deltoides*	High	Oval	Red catkins/April	Light brown capsules
Swamp White Oak *Quercus bicolor*	High	Oval	Yellow-green catkins/April-May	Acorns
Pin Oak *Quercus palustris*	High	Conical	Yellow-green catkins/April-May	Acorns
White Ash *Fraxinus americana*	Medium	Irregular oval	Loose, purplish clusters/April-May	Tan/brown samaras
Honeylocust *Gleditsia triacanthos*	Medium	Irregular oval	Yellow-green spikes/June	Purple-brown pods
Black Gum *Nyssa sylvatica*	Medium	Conical	White clusters/May-June	Blue-black berries
Sycamore *Platanus occidentalis*	Medium	Round	Yellow-green clusters/May-June	Tan/brown balls
Scarlet Oak *Quercus coccinea*	Low	Round	Yellow-green catkins/May-June	Acorns
Eastern Red Cedar *Juniperus virginiana*	Low	Columnar	Reddish, solitary/May	Dark blue berry-like cones
Shadbush *Amelanchier canadensis*	Low	Round	White, loose clusters/March-April	Maroon-purple berries
Black Locust *Robinia pseudo-acacia*	Low	Round	White spikes/June	Tan/brown pods

Your Rain Garden can be a showplace in the spring. Plants such as Daylilies, Iris, Viburnum, and Sweet Pepperbush thrive in the moist conditions of Rain Gardens.



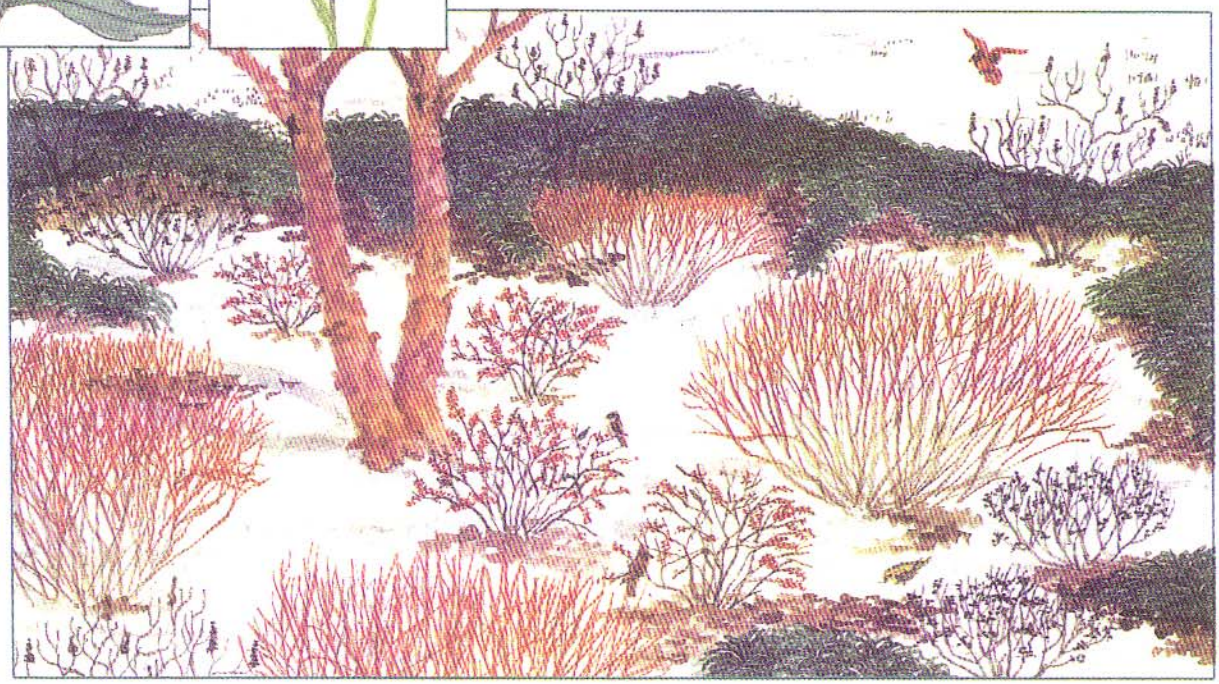


Sample Rain Gardens



Customized Rain Gardens can vary tremendously. The Garden above features Cardinal Flowers and ornamental grasses such as Redtop and Tufted Hair Grass for beautiful color throughout the summer and early fall.

The Rain Garden below is designed primarily with low-maintenance shrubs that look great year-round and attract a variety of wildlife. The bark of the River Birch adds interesting texture and color to the Garden in winter.



You are encouraged to add plants to your Rain Garden. More plants mean improved pollutant removal and stormwater quality. The information below provides helpful suggestions for adding or replacing plants in your Garden.

- When replacing a plant in your Rain Garden, place the new plant in the same location as the one you removed. If the old plant cannot be completely removed because of a large root system, place the new plant as close as possible to the original location. In addition, try to select a comparably sized plant for replacement. Seedlings are not recommended, since they do not tolerate fluctuating water levels as well as larger, containerized, or balled-and-burlapped plants.

- If you are replacing a full-grown tree or shrub, the replacement should be as large as possible. Since these plants are performing the service of collecting and filtering pollutants from stormwater, a small plant will not perform as well as a large one.

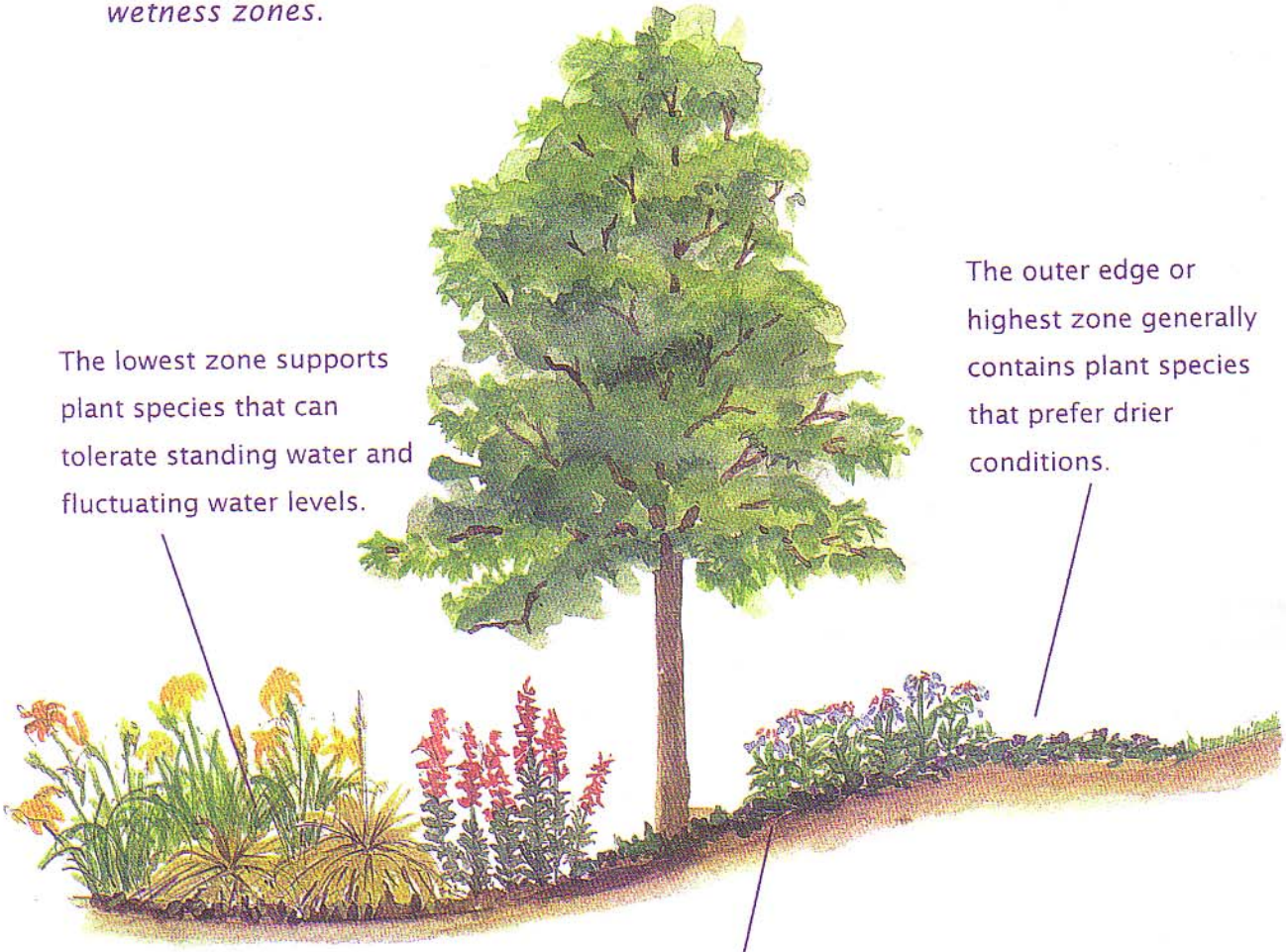
- Trees and shrubs may be planted in any location of your Rain Garden; however, be sure to leave enough room between new and existing trees and shrubs. Some trees and shrubs need more room than others to grow, and if crowded, may not be able to compete for sun and water. The best time to plant is fall or early spring, so plants can adapt to their surroundings before growing new leaves. Trees and shrubs should be planted as soon as possible after purchase, preventing dry-out and ensuring a better chance of survival.

- Perennials and ground covers can also be planted anywhere in your Rain Garden. Plant in the fall so that they can adapt to their surroundings before winter sets in. Ground covers should be planted in the middle to outer edges of your Rain Garden, and will naturally spread to other suitable areas.

  Note: Plants placed in the wettest zone of your Garden, however, must be able to tolerate fluctuating soil moisture. Annuals (bulbs) should be planted along the outer edges of your Rain Garden where the soil is drier. Annuals should be planted in the spring, after the last frost. In our area, this is generally after March.

Adding and Replacing Plants

Your Rain Garden is composed of woody plants (trees and shrubs) and herbaceous species (flowers, grasses, and ground covers) planted in three wetness zones.



The lowest zone supports plant species that can tolerate standing water and fluctuating water levels.

The outer edge or highest zone generally contains plant species that prefer drier conditions.

The middle zone is slightly drier, but also supports plant species that can tolerate fluctuating water levels.

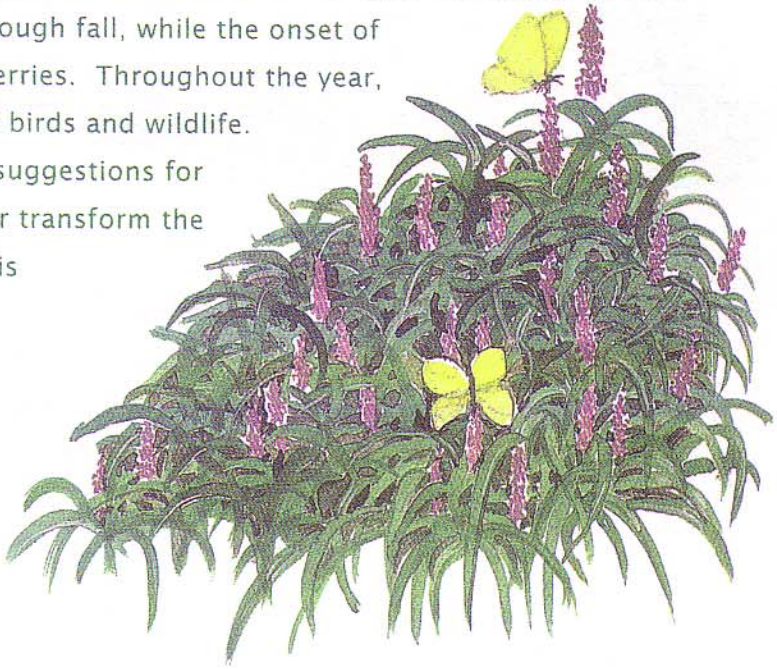
Introduction

Rain Gardens—the natural solution

Rain Gardens use the concept of bioretention, a water quality practice in which plants and soils remove pollutants from stormwater. Planted in low-lying areas, Rain Gardens contain specific layers of soil, sand, and organic mulch. These layers naturally filter rainwater, which can be polluted by oil and chemicals built up on our lawns and driveways. Rainwater can also pick up pollutants as it passes through our atmosphere on its way to the ground. A natural way of protecting water quality, Rain Gardens ensure a cleaner, healthier environment.

Enhancing your Rain Garden

In nature, plants live where the environment is most suitable for their healthy growth. Your Rain Garden is most effective when created with plants that thrive in moist or sometimes saturated soils, and that are well adapted to the climate of our area. A variety of trees, shrubs, ground covers, grasses, and flowering plants have been carefully chosen and planted, and you can add others to create your own unique look. With each changing season, the look of your Rain Garden also changes. Perennials provide vibrant colors from early spring through fall, while the onset of winter highlights evergreens and berries. Throughout the year, your Garden will attract a variety of birds and wildlife. Beginning on page 8, you will find suggestions for alternate plants that can enhance or transform the look of your Garden. Each species is followed by important information about its moisture and sun requirements, as well as details about foliage, flowers, and fruit.



Rain Gardens

PRINCE GEORGE'S COUNTY MARYLAND

Prince George's County
Department of
Environmental
Resources

Published by the Prince George's County Department of Environmental Resources

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