



Rainscaping: A Beautiful Solution to Water Pollution

Our Challenge

Over time, people have changed the Chesapeake region's landscape from fields and forests to hard surfaces—roads, sidewalks, and roofs. In a forest, rain is absorbed into the soil. But when rain hits hard surfaces, it runs off. As this rainwater runoff flows over land, it collects loose soil, fertilizer, pesticides, motor oil, pet waste, and trash. These eventually run into storm drains, which empty into the nearest stream or water body—causing water pollution.

Polluted runoff is the major source of damage to our rivers and coastal areas, especially the Chesapeake Bay.



Anything that is put on the land can end up in your local creek, stream, river or Chesapeake Bay.

The Solution to Pollution

There are many things that you can do right in your own yard to help keep our water clean.

Walk through these gardens to learn more about “Rainscaping” projects you can do at home, school or work. These projects capture rainwater. They reduce, trap and filter runoff so that cleaner water flows to our waterways. They also create healthy habitat areas full of beauty and life.

Explore the Rainscaping features of this site:

- Rain Gardens
- Rain Barrels
- Dry Stream Bed
- Conservation Landscaping
- Pervious Paving



The Chesapeake Conservation Landscaping Council is dedicated to educating the public about conservation-based gardening and landscaping practices in the Chesapeake Bay watershed. For more information about CCLC and this exhibit, visit the web site at www.chesapeakelandscape.org.

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Rainwater runoff from the built landscape carries pollution that damages our rivers and Chesapeake Bay. The “Rainscaping” practices demonstrated in this garden can help clean up and reduce runoff from yards, business and school properties, municipal facilities, parks, streets, sidewalks, rooftops, and parking lots.

Rain barrels collect roof runoff for use elsewhere in the landscape.



Rain gardens slow runoff, trap pollutants and provide beautiful areas that attract birds and butterflies. Each of the three rain garden depressions here holds water temporarily during heavy rain, then overflows into the **dry streambed** that connects them. This pebbly pathway helps carry water to the next depression and provides additional surface area for filtering out pollutants.



Both ends of the garden walkway are made of **pervious paving**. The paving stones are set so that rainwater landing here trickles down between the stones and is absorbed by the soil below, leaving the walking surface without puddles. Many attractive and creative options are available to suit any style for sidewalks, patios, and even parking.



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The Chesapeake Conservation Landscaping Council (CCLC)’s exhibit was made possible in part by the generous support of:

- Snitzer Landscaping
- Beyond Lawn
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- Alliance for the Chesapeake Bay
- Arlington Echo Outdoor Education Center
- Audubon Maryland-DC
- Chesapeake Ecology Center
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- Maryland Department of Natural Resources
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RAINSCAPING—A BEAUTIFUL SOLUTION TO WATER POLLUTION

Conservation Landscaping



CONSERVATION LANDSCAPES feature plants that are native to the region where they are being grown. In this demonstration garden, we have used only species native to the Chesapeake Bay region to reveal the diversity and beauty of our native trees, shrubs, and herbaceous plants. **Why use native plants?**

- They are adapted to the local soil and climate.
- They have developed natural defenses to many pests and diseases.
- They are unlikely to become invasive, unlike some exotic ornamental species like Bradford Pear or Autumn Olive.
- They require little use of water, fertilizers, and pesticides.
- They sustain native pollinators and other beneficial wildlife.

Photos: Beautyberry (Robert Mohlenbrock, USDA);
Flowers of serviceberry (G.A. Cooper, Smithsonian
Institution)



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Rain Barrels

RAIN BARRELS are a centuries-old technique to collect rainwater from rooftops. Rain barrels help to keep our groundwater and streams clean by capturing rainwater before it flows to the street and down the storm drain or sewer. You can find rain barrels for sale in garden centers and on-line to attach to the downspouts at your own home or business.

Rain Barrel Benefits:

- **Lower water costs:** Rainwater is free! Less water usage means lower water bills. In an urban setting such as the District of Columbia, over 40% of the domestic water supply is used for outdoor activities.
- **Less stormwater runoff:** Lower volumes of erosion-causing runoff and associated pollutants running into our street drains, and streams.
- **More water conserved** during hot, dry summer months.
- **Cleaner chlorine-free water** for greener, healthier gardens and lawns.
- **More water available** and handy for car washing, dog washing, filling garden ponds, and other uses.

Good To Know:

- Water collected in a rain barrel is not intended for human consumption.
- Properly designed rain barrels do not breed mosquitoes.



Rain barrels attach to gutters and can blend well with existing landscaping. Photo credit: EPA

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Rain Gardens

RAIN GARDENS are landscape features that capture stormwater in a shallow depression, allowing the rain water to slowly filter into the ground rather than run off into the storm sewer.

Why plant a rain garden?

- Rain gardens capture storm water and slowly filter out common pollutants and sediment.
- They allow more water to filter through the ground than a conventional lawn, replenishing groundwater.
- They preserve natural stream flows and water quality by reducing runoff and erosion.
- Rain gardens require less water and fertilizer than conventional lawns.
- They provide a visually pleasing habitat for birds, butterflies and beneficial insects.

Good To Know

- Rain gardens are designed so that water soaks into the ground within a day or two, less than the amount of time needed for mosquitoes to breed.
- The garden should be located at least 10 to 15 feet from your foundation, to prevent seepage. Include an overflow area that directs excess water away from your foundation during a large storm.

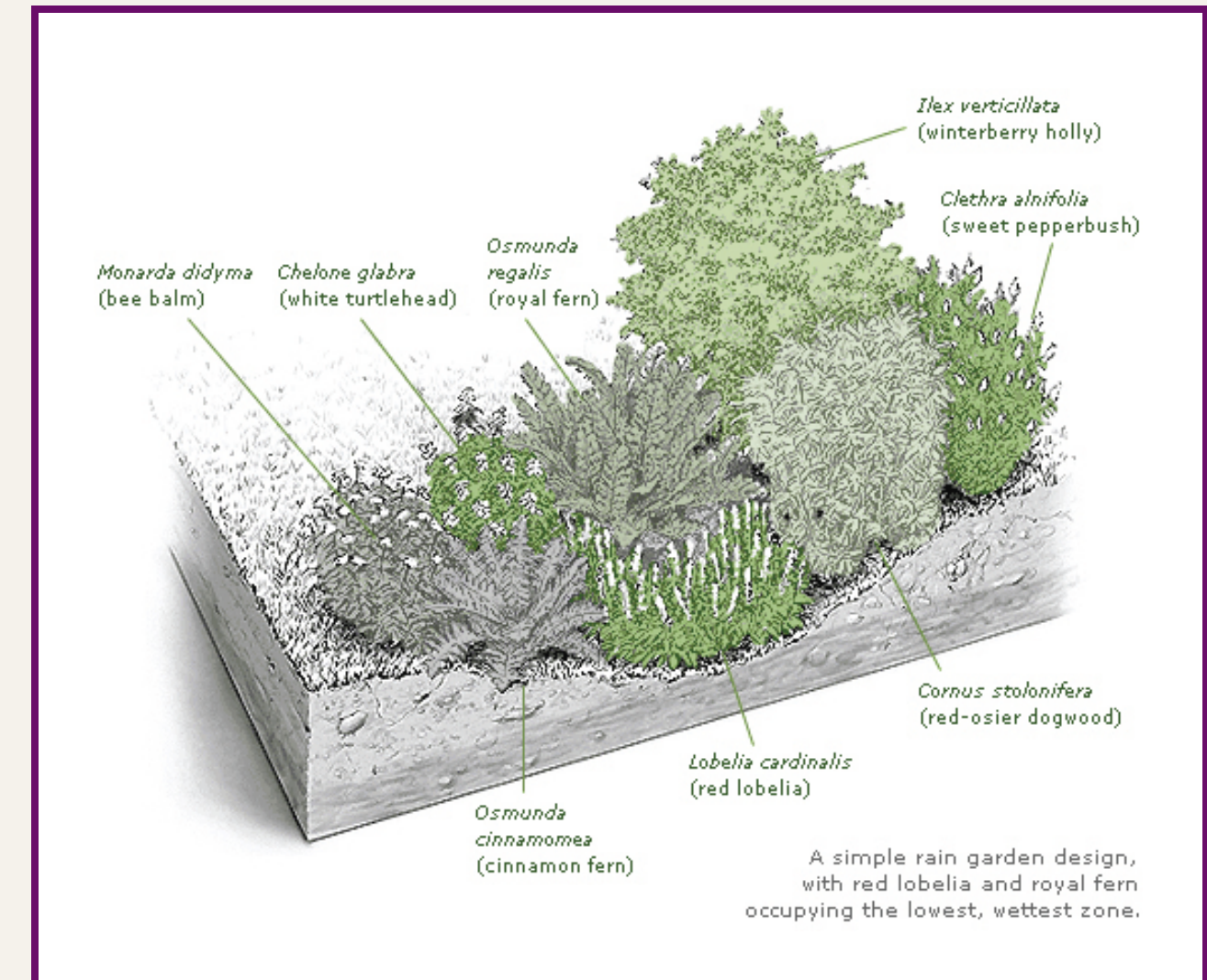


Illustration by Steve Buchanan, used courtesy of Brooklyn Botanic Garden.

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Rainscaping – A Beautiful Solution to Water Pollution

The CCLC Rainscaping garden focuses on managing stormwater runoff, a dire problem for the Chesapeake Bay and its streams and rivers.

What's the problem with stormwater? Over time, people have changed the Chesapeake region's landscape from fields and forests to more hard surfaces – roads, sidewalks, and roofs, as well as lawns that are often compacted. As rainwater runs over these hard surfaces, it collects fertilizers, pesticides, loose soil, motor oil, pet waste, and trash. These pollutants eventually wash into storm drains, which empty directly into the nearest stream or river. Water going into a street storm drain does not get filtered or treated.

In short, anything that is put on the land can (and often does) end up in your local creek, stream, river or Chesapeake Bay. The CCLC garden demonstrates a better way to manage stormwater AND create an attractive, healthy landscape.

Three rain gardens catch and filter stormwater as it moves downhill, rather than allow it to run off into the storm sewer and the Chesapeake Bay. Rain gardens can be natural low- leave as two unhyphenated wordspots or man-made depressions. Rain gardens are designed so that water soaks into the ground within a day or two, (less than the amount of time needed for mosquitoes to breed). Plants that do well in moist conditions are placed in the lowest part of the rain garden, while plants that are adapted to dryer conditions are put along the higher edges.

Well-crafted rain gardens create new opportunities for creativity and flexibility in design as well. In the late summer droughts of the past few years, rain gardens have allowed moisture-loving plants to thrive (*cardinal flower*, *Iris versicolor*, ferns) that would have browned off and died back in a normal garden bed. Well sited, Rain gardens add soil moisture that can be used by the trees in a dry period. So, rain gardens are good for the environment and for expanding the range of options in your landscape.

A dry stream bed connects the rain gardens to help move and filter any overflow water through the rain garden system. Mixed size cobble helps create a natural look while also providing greater visual interest.

We used **native plants** that are adapted to our region, which means they can thrive under the varying Chesapeake climate swings – including our occasional drought conditions. (Note: we did end up using some cultivated varieties). Native plants typically require little use of water, fertilizers, and pesticides once they are established after the first planting year, which often makes them much lower maintenance compared to annuals/exotics.

Native plants sustain native pollinators and other beneficial wildlife, compared to non-native plants which often provide poor habitat. For instance, one native oak tree can provide habitat for over 500 butterfly and moth species! An exotic species like a Bradford pear, by contrast, might provide habitat for one or two species (source: Professor Doug Tallamy, University of Delaware).

Pervious pavers are set up at each entrance. Unlike typical pavement that repels water, this design allows water to seep in along the cracks between paving stones. There is a layer of bluestone gravel underneath the stone pavers to help with drainage.

Rain barrels help capture stormwater runoff from roofs. One of our barrels is connected to the roof of the neighboring straw-bale house (the rest are for display only). You can use the water collected from rain barrels to water your garden, wash your car or dog, etc. Rain barrels typically run from \$50 on up to around \$200.

When we trap rain water at home using these “rainscape” elements, we help replenish ground water, and filter and clean the water that reaches both our streams and faucets. Clean ground water means clean drinking water!

Questions can be sent to chesapeake@chesapeakelandscape.org .