



# Chesapeake Ecology Center **UPDATE**

**Spring 2008**

**Summer, fall, winter, spring,  
The seasons rotate as each brings  
its special beauty to this earth of ours.  
Winters' snow and Summers' flowers  
Frozen rivers will flow come spring,  
There is a renewal of everything.**

– Edna Frohock

## **Celebrate Earth Day / GreenScape Day 2008 at the CEC, Saturday, April 19th, 9 AM to Noon**

You are invited to tour the 20 Native Plant Demonstration Gardens and Sites. If you're up to playing in the dirt, you can help with the annual spring spruce up. Snacks, gloves, and tools will be provided.

## **Rainscaping—Reshaping the Paving of Paradise**

*Anecdote: A real estate developer bought a large plot of land including a beautiful mountain. He flattened the top of the mountain to build a huge lodge there, removed all the trees on one side of the hill to put in a terraced swimming pool, and built a sculpture garden on a large concrete landing on the other side. Then he advertised in the travel journals under the slogan, "Ain't nature grand!"*

Over time, people have changed the Chesapeake region's landscape from fields and forests to more hard surfaces—roads, sidewalks, driveways, and roofs. The Chesapeake Bay Program reported that between 1990 and the year 2000, population in the Bay watershed increased by about 8 percent, while the amount of impervious surface increased by 41 percent.

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

**Polluted runoff is the major source of damage to our rivers and the Chesapeake Bay.**

Even partially impervious surfaces, such as turf grass, cause rainwater runoff. Add to that, excessive fertilizer and pesticide use and the problems are exacerbated. Many people don't understand that many of their culturally driven landscaping practices are not sustainable and cause significant damage to our waterways. There are many things that everyone can do right in their own yard to help keep our water clean.

By using a variety of "Rainscaping" techniques we can improve water quality. From rain gardens and rain barrels to pervious pavers and green roofs, rainscapes are a wonderful mix of innovative approaches which help conserve our natural resources while creating habitat areas full of beauty and life. Add native plants to your landscape—which require less fertilizers, pesticides, and watering than exotic plants—and local birds and butterflies will thrive!

## **Imitating Nature with Rain Gardens**

Leaving or creating depressions in the landscape promotes rainwater infiltration and reduces polluted runoff. Take a walk through a forested area and you'll notice knolls and swales. Shaping the land in this fashion imitates nature by creating contours throughout the landscape, which allows rainwater to soak into the ground—as nature intended. The human tendency is to level the landscape, unaware of the environmental impact of this type of grading. We then "pave over paradise and put up a parking lot."

Rain gardens are simply low-lying, vegetated depressions—generally 3 to 8 inches deep—which have absorbent soils that temporarily collect rainwater runoff from impervious surfaces and allow the runoff to slowly percolate into the soil. The depression should be a flat-bottom, saucer shape rather than a bowl shape so that rainwater runoff can sheet out throughout the garden to allow for better infiltration. This generally takes a few hours and shouldn't take more than 2 days. Rain gardens are attractive landscaping features that function like a natural moist garden, moist meadow, or light forest ecosystem. They can look as informal or as formal as you like.

Rain gardens provide flood control, groundwater recharge, and water-cooling benefits, while the plants, soils, and associated microorganisms remove many types of pollutants—such as excess nutrients, pesticides, oils, metals, and other contaminants—from stormwater runoff. Stormwater pouring off hot roofs, pavement, and other impervious surfaces is temporarily captured, cooled, and allowed to percolate into the ground. Nutrients such as nitrogen and phosphorus, which would otherwise contribute to algae blooms and other problems in the Bay, are instead put to beneficial use by being taken up by the plants in the garden. Some studies show that about 50 percent of such pollution comes from individuals and homeowners, through yard care, yard waste, and chemical pollution from household activities.

Native plant rain gardens also become wildlife oases with colors, fragrances, and the sights and sounds of songbirds and butterflies regularly visiting. Additionally, rain gardens increase groundwater supplies, significant because many people get their water from underground aquifers. The replenishment of groundwater—which is particularly important in times of drought—depends on the absorption of rainwater into the ground.

By creating rain gardens and keeping most of the rain that falls on your site contained on site—the way nature intended—you can help improve water quality in local streams, rivers, and the Chesapeake Bay. Plant native trees, shrubs, and herbaceous perennials to improve the ability of water to filter down and recharge groundwater supplies, unlike turf grass, which tends to form a partially impervious barrier to water infiltration.

Notably, a rain garden is a type of bioretention installation, however, “bioretention” generally refers to installations that are designed and engineered to be more complex than home rain gardens. They are deeper and use layers of gravel, sand, and soil, and incorporate underdrains.

## Rain Barrels for Rainwater Collection

“Collecting rainwater for use during dry months in rain barrels or other depositories is an ancient and traditional practice. Historical records show that rainwater was collected in simple clay containers as far back as 2,000 years ago in Thailand, and throughout other areas of the world after that. With the rising price of municipal water and drought restrictions now facing much of the United States during the summer months, more and more homeowners in our own modern society are turning to the harvesting of rainwater to save money and protect this precious natural resource.” Source: <http://rainbarrelguide.com/>

“Lawn and garden watering make up nearly 40% of total household water use during the summer. A rain barrel collects water and stores it for when you need it most—during periods of drought—to water plants, wash your car, or to top a swimming pool. It provides an ample supply of free 'soft water' to homeowners, containing no chlorine, lime or calcium making it ideal for gardens, flower pots, and car and window washing.”  
Source: <http://www.dnr.state.md.us/ed/rainbarrel.html>

Rain barrels collect and store rain water from your roof that would otherwise be lost to runoff and diverted to storm drains, streams, and the Chesapeake Bay. Relatively simple and inexpensive to construct, rain barrels can sit conveniently under any residential gutter down spout. Only 1/4 inch of rainfall from the average roof will fill the typical 55-gallon rain barrel. More than one barrel can be installed in a series to collect more rain- water, or larger cisterns can be installed for additional water storage. Saving water not only helps protect the environment, it saves you money and energy by decreasing the demand for treated tap water.

**For additional information, you can download a 12-page booklet, which includes rain garden designs, from the home page of the CEC’s website, entitled *Rainscaping with Rain Gardens...Working With Nature to Transform Stormwater Runoff into Garden Oases*.**

Visit [www.ChesapeakeEcologyCenter.org](http://www.ChesapeakeEcologyCenter.org) for more information, or contact: Zora Lathan at [zoralathan@earthlink.net](mailto:zoralathan@earthlink.net), or at 410-212-4506.



### Special Offer

For \$25 you can become a member of the Chesapeake Ecology Center and receive a complimentary copy of *Ecoscaping Back to the Future...Restoring Chesapeake Landscapes*

This 92-page conservation landscaping primer highlights native plant rain gardens and xeriscapes at the CEC. Contributions are used for the maintenance of the 20 Native Plant Demonstration Gardens and Sites—which are a public resource.

Please send checks—made payable to CEC—for the primer (\$15), or for membership and primer (\$25), to:

**Chesapeake Ecology Center  
c/o Treasurer  
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245 Clay Street  
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