

Sponge Gardening: Soaking Up the Rain

by Alison Gillespie

Photos by Drena Galarza



When people complain about pollution in the area's creeks and streams, Ed Murtagh tells them to grab a shovel and start planting. "Gardening may be one of the best defenses we have in the fight against poor water quality," he says. "Removing your lawn to plant trees, shrubs, and perennials can make a huge difference."

Too often, Murtagh says, property owners treat water as a problem to be addressed by moving it off their property as quickly as possible. Because of this, stormwater is often channeled directly into streets and concrete gutters. As it moves toward streams, it picks up all kinds of chemical pollution from those paved areas, which are then deposited directly into the streams. Channeling can also cause a large amount of water to hit streams quickly during storms, causing erosion problems.

"We are asking people to think about water differently," says Murtagh. "Yards can be designed to act as giant sponges." The sponge holds water so it slowly soaks into the soil and flows naturally to the stream.

Murtagh is a volunteer with Friends of Sligo Creek (FOSC), a group working in Montgomery and Prince George's Counties in Maryland to protect and enhance a small tributary of the Anacostia River. Like many urban waterways, Sligo Creek is imperiled by litter, invasive exotic plants, and pollution, but it is also loved by those who live in close proximity to its banks. What many don't realize is that homeowners — even those who don't live immediately adjacent to the creek — can have an enormous impact on the condition of such urban creeks.

One easy way to help, Murtagh asserts, is to plant a rain garden. Rain gardens are specially designed depressions which are filled with plants and designed to collect and store rain water. Underneath these gardens, layers of sand, rocks, and soil can act as natural filters. The location of a rain garden is usually the key to its success. A well-designed rain garden will only allow water to stand for a very short amount of time before releasing it, unlike garden ponds which are designed to hold

water indefinitely.

And trees, it seems, can act like drinking straws set inside those garden sponges. Through the process of evapotranspiration, water is absorbed by the tree and then slowly released into the atmosphere. As this occurs the water is filtered, and the air surrounding the tree is slightly cooled. A large oak tree, for example, can transpire as much as 40,000 gallons of water per year according to the US Geological Survey. Shrubs and perennials can also soak up water and act as filters. Although unable to transpire the tremendous amount of water moved by the average tree, shrubs and perennials are sometimes more suited to urban areas, and they benefit wildlife too. The root systems of trees, shrubs, and perennials can also help to break up the soil and improve rain water filtration.

In contrast, grass-filled lawns absorb very little water. They also often require more maintenance and are treated with large amounts of chemicals, many of which end up as pollutants in run-off when rain washes over the grass blades during large storms.

But no matter what kinds of plants a rain garden contains, landscapers need to address the soil quality of an area before planting. "Soil that contains stuff like compost, leaf litter, and twigs can really soak up the water," explains Murtagh.

To illustrate the ease and effectiveness of planting rain gardens, Murtagh and his fellow volunteers have installed two new demonstration plots on public property. One, which sits on the grounds of Eastern Middle School in Silver Spring, MD, was just finished in April. Friends of Sligo Creek (FOSC) built the rain garden in cooperation with the Eastern Middle School PTSA, the Montgomery County Public Schools Green Schools Program, and two other local watershed groups. The garden is planted with many native shrubs and perennials including clethra, inkberry, winterberry, and red osier dogwoods, and sits just outside the entrance to the school. This is an area which is often flooded and sometimes even icy in winter due to poor drainage.

Murtagh says the rain garden will

enhance the school's appearance and also address safety issues associated with excess water on the property, although, at first glance, the newly planted area may puzzle some visitors. Berms have been built just below two of the school's main downspouts. Instead of dumping water out onto the schoolyard, pipes send the water directly into the garden, where it is readily used by several new shrubs and perennials. The roots of the plants are growing in a rich soil which the volunteers augmented with composted leaves and sand.

The entire system is aimed at trapping water before it hits the surrounding driveway and parking lot. During large storms, excess water can also drain slowly away into the surrounding soil. "It's a basically a biofilter," says Murtagh.

A bit farther north in Wheaton, MD, another FOSC garden sits in the middle of a quiet residential neighborhood. Dubbed the American Elm Park, this little space was initially planted in 2000 by a group of families living nearby. Before they got to work gardening, the tiny pocket of land at the corner of Ladd and Luttrell was nothing but a small, forgotten parcel which developers had used as a dump when they built houses nearby in the early 1990s.

"Apparently a small stream used to run through there," says Kathy Michels. "Then the site was clear-cut and repeatedly torn up, leaving a sticky, non-porous, clay soil along with buried construction debris."

The neighbors who started the project were joined by FOSC, the Montgomery County Department of Environmental Protection, and the Isaac Walton League. There were some setbacks, but now the parcel boasts a rain garden, designed to filter and absorb water before it reaches the banks of the Sligo, less than a block away. Four disease-resistant American Elms have been planted alongside many nectar-rich native perennials. The garden regularly attracts songbirds, butterflies, and hummingbirds and has even been certified as a wildlife habitat garden by the National Wildlife Federation.

Murtagh and his group hope that the functional beauty of these sites will inspire homeowners to try rain gardening in their own yards. 🌱

Alison Gillespie lives in Silver Spring, MD. Her garden is full of bugs and that is just the way she likes it. She can be reached via email: alg@nasw.org.

Rain Garden Resources

Low Impact Development Center

<http://www.lowimpactdevelopment.org/school/bioret/brm.html>

This non-profit, located in Beltsville, MD, was established to develop and provide information about many different kinds of bioretention, including rain gardens. Their web site is especially helpful for those working at school sites.

Raingardens of West Michigan

http://raingardens.org/docs/Create_A_Rain_Garden.pdf

Check this site for an entire publication on how to build your own rain garden. Although written for Midwestern homeowners, almost all of the information can be applied to gardens in the Mid-Atlantic states. Their helpful guide takes you through the installation process step-by-step.

Rainscapes

<http://209.142.214.237/rainscapes/garden.htm>

This site is run by the cooperative effort of the Montgomery County, MD, Department of Natural Resources and the Potomac Conservancy. Here you'll find loads of information on rain gardens and lists of nurseries that specialize in native plants.

Friends of the Rappahannock

http://for.communitypoint.org/low_impact_development.html

This web site details some interesting rain gardens which have been installed in Stafford County VA, and shows examples of low impact development principles at work on commercial properties.

Friends of Sligo Creek

<http://www.fosc.org>

FOSC is working to enhance and protect a small tributary in Maryland. This site includes information on recently installed rain gardens and how your actions as a homeowner can impact the larger watershed.



Creating Your Own Rain Garden

Planting a rain garden can be a great way to solve existing drainage problems in your own backyard. Although people often worry about mosquitoes being attracted to such spots, professionals say a well-designed plot will not harbor such pests. This is because unlike a still pond, a rain garden is not intended to hold water for an extended period of time.

To determine a good spot for your own rain garden:

- Go with the flow. Follow the lead already taken by water as it moves through your yard and look for places where water often sits after large storms. Down spouts can be extended or pointed towards your chosen area.
- Avoid planting near septic systems and in the rights-of-ways owned by the local municipality or utility company.
- Consider the area under existing trees very carefully. Some species may not respond well to large amounts of water and many species can be harmed when extensive digging takes place near their established roots.
- Maximize the power of your "sponge" by augmenting the soil. Veteran rain gardeners recommend a mix which contains 50-60% sand, 20-30% top soil (no clay), and 20-30% compost. It is essential that your planting area is rich in organic material, and sterilized soil mixes should never be used for rain gardens.

All photos on this two-page spread were taken at the American Elm Park



Choose a variety of native plants that can withstand sitting in wet soil for up to a day. A list of rain garden plants is at www.weems creek.org.

