Right as Rain

Rain gardens beautify landscapes and reduce pollution

By Bill Blackston

Imagine stepping outside to fetch the morning paper just in time to witness a blue heron lift itself gracefully into the air from your rain garden. It's more likely than you might think. Your decision to build a rain garden to absorb water runoff from roofs, driveways, and lawns not only benefits the environment but can help diverse wildlife thrive, potentially opening up your yard to a feast of visual pleasures.

With a mature rain garden in place, you'll want to turn off the televison on a warm summer evening and delight in the spectacle of visiting birds, frogs, dragonflies, swallowtail and monarch butterflies, and (after dark) firelies that will be drawn to plants that thrive in a moist environment.

Rain gardens have been around for about 15 years, gaining popularity more quickly in the Midwest and West. They are shallow, generally flat-bottomed depressions designed to collect rainwater and allow selected plants, bacteria and soils to naturally filter and remove pollutants from the water as it soaks into the ground.

The term "pollution" for most folks conjures imges of big factory smoke stacks and large pipes draining unsavory or dangerous chemicals into a river. By definition, this is called a "point source," and for the most part, regulating agencies such as the state Department of Health and Environmental Control keep a very tight handle on what is released into our water systems.

However, now we have to be concerned about another type of threat called "nonpoint source" pollution, meaning that it comes from many different locations across the landscape. The federal Environmental Protection Agency estimates that the number one source of surface water pollution is caused by stormwater runoff, which accounts for an estimated 80 percent of all surface water contamination. In fact, stormwater runoff has polluted nearly 40 percent of SC waterbodies.

Because we live in a fast-growing state and region our issues are compounded by the fact that the more development we experience, the more impermeable surfaces are created. Those surfaces include roads, rooftops, parking lots, driveways and so on. The idea is basically that you take a piece of natural land that has the ability to let stormwater permeate or infiltrate into the soil and clean itself of both natural and man-made pollutants. These polutants might include everyday things such as soil, pet waste, pesticides, fertilizer, oil and grease, leaves, litter, and other potential pollutants. Once you put a cap on the land, you alter things like water speed quanitity and quality. Compared with conventional urban landscapes, rain gardens allow an estimated 30 percent more water to soak into the ground.

It doesn't take a heavy rainstorm to send pollutants rushing toward streams, wetlands, lakes, and oceans; a single garden hose can supply enough water. Many people think that the water running into

street drains and culverts is remediated at some mysterious treatment plant. This simply is not true. It may run downhill and be collected in a detention pond, but it still must be cleaned, with pollutants removed at some point and disposed of properly.

We all are part of the problem when it comes to stormwater runoff. Continued growth and development are only going to create more impermeable surfaces that cause more pollutants to move off the landscape quickly.

Seasoned gardeners already know how to build and beautify the landscape. But if you have the correct slope of land, you can create a rain garden from a depressed area in the soil that collects water from siginificant rain events. (If you want to impress your academic friends, call your rain garden a "bioretention cell.")

In addition to being a functioning filter to cleanse stormwater as it is slowly reabsorbed into the water table, rain gardens can be beautified with purposeful grasses and distinctive plants, creating praiseworthy displays you won't feel compelled to hide with fencing or other means.

Some of you already may have these locations in your yard that may be simply turf (known as grass swales). All can and do infiltrate rain from storm events; therefore, slow water movement, allowing the soil and plants naturally to remove pollutants from the water system. The plants can use nitrogen and phosphorus for growth. In cases involving organic material, such as compost, microbes generate usable nutrients for plants.

There is much to consider in planning a rain garden – things such as downhill slope and the soil's ability to percolate water. How much water a rain garden must handle and, of course, the types of plants you select for it will help determine the size and layout of the rain garden.

On average, residential rain gardens occupy from 150 to 500 square feet and are located at the lowest elevation in the yard. They should be constructed at least 10 to 20 feet away from a home's foundation and never be located over a septic tank. You'll want to locate your rain garden somewhere in the vicinity of a downspout or sump pump. Or you can direct water to your garden by digging a trench in which you may put plastic piping or making a natural swale to guide the water.

Most rain gardens are six inches in depth but vary based on the adsorption rate of the soil. Slow-draining clay soils may call for a shallower garden and may pond for a day or two after a heavy rain. Sandy soils that readily infiltrate can necessitate deeper ground penetration by as much as one or two feet. The bottom of the rain garden should be kept fairly flat so that water can spread out.

Don't be afraid of mosquitoes; most rain gardens don't pool water long enough for them to spawn. In addition, dragonflies and other creatures love to feast on mosquitoes and will keep their presence under control.

If you have especially poor drainage conditions, you can increase the permeability of your soil by adding compost or mulch to it and choosing highly water-tolerant plants.

Experts recommend using hardy, native plants. A number of ornamental grasses that thrive in rain gardens include sweetgrass, switch grass, and river oats. Deciduous shrubs, including witch alder, swamp rose, winterberry, beautyberry, and possumhaw should do well. Evergreen shrubs recommended for rain gardens include anise shrub, wax myrtles and dwarf palmetto. Ferns from Southern Lady to marsh fern, also are a great choice.

You can add color to your rain garden with a number of perennials, including swamp sunflower, black-eye susan, goldenrod, dogtooth daisy, wild bergamot, ironweed, blue flag iris and verbena. Small trees are acceptable for rain gardens, especially those larger than 150 square foot. These include red buckeye, river birch, red and white atlantic cedars.

Depending on your personal taste, it's best to select a variety of heights, shapes, colors, and textures in plants and to try and compose a mix that will bloom at different times throughout the year. As with any garden, the rain garden will require weeding and attention with regard to basic upkeep.

Rain gardens are a great tool for landowners to help clean up the environment and should be utilized in the landscape wherever practical. However, before even experienced gardeners run out and start digging holes in their lawns or flowerbeds, they are advised to do their homework. There are some great websites and blogs on rain gardens; all you need to do is "google" the term. Extension services historically are a reliable source of research-based information.

How well we take care of the water runoff as it moves downhill into the streams, lakes, and rivers on its trip to the ocean determines what the quality of our water system is now and for future generations.

Remember, only rain water should go in the storm drain, and "we all live downstream."