



# FRIENDS

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Matthaei Botanical Gardens and Nichols Arboretum

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News, p. 7

## Rain, Rain, You Can Stay

### Rain Gardens Slow Storm Water Runoff and Require Little Watering

Monica Milla

*Monica Milla is a master gardener, master composter and MBGNA volunteer. She lives within 15 feet of Malletts Creek and every year she turns a little more of her lawn into garden beds.*

Want a beautiful, low-maintenance garden that also slows and cleans storm water runoff? Rain gardens do exactly that and they are easy to create in any home landscape.

Rain gardens allow water to slow and cool down (it can be 140° F when coming off the roof), and they filter out nutrients and pollutants. According to the Rain Gardens of West Michigan website, [www.raingardens.org](http://www.raingardens.org), "Rain is natural; storm water isn't. Up to 70% of the pollution in our streams, rivers, and lakes is carried there by storm water. About half of the pollution that storm water carries comes from things we do in our yards and gardens!"

Rain gardens let about 30% more water soak into the ground than a lawn does, and keep 90% of pollutants out of our waterways. How? They simply use water that would otherwise run off your property each time it rains. They collect and hold the water from downspouts or driveways to give it the chance to filter slowly into the ground rather than to flow off quickly.

Storm water specialists in Maryland introduced rain gardens, or bioretention systems, in 1990. Since then they are becoming popular all over the U.S. in both residential and commercial settings. When homeowners create rain gardens, they are mimicking the natural hydrologic function of a forest where a spongy "litter" layer of leaves and needles soaks up water and allows it to penetrate the soil layer slowly. The plants, soil, roots and mulch of the rain garden serve the same function.

#### Rain Garden Basics

A rain garden should be located strategically to intercept water runoff. It can be created by directing a downspout into an existing garden, by installing plants in a low area where water tends to pool up, or by creating a garden in an area of lawn where water tends to run. Making a rain garden is similar to creating any other new garden: evaluate your site, create a design, dig and amend the soil, and plant. For step-by-step instructions and sample designs, see the website cited above.



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The garden must be located away from buildings and utilities, with runoff diverted to it. It can be large or small, designed in various shapes and readily added to any landscape. It should be a bit lower than its surrounding area: it's a slight depression or saucer-shaped indent containing soil amended with compost or humus to better absorb water. You need to dig up slightly more soil than you replace to create this shape. (That extra soil may be used to create a berm or mound with sloping sides to direct the water to the garden or to keep it in if your site slopes downward.)

Recommendations for the depth of the amended soil cover a broad range, anywhere from three inches to two feet. Obviously, the deeper the good soil, the more water it can absorb and filter. If you have been gardening and amending your soil for a long time, or are otherwise blessed with good, well-draining soil, you will need to dig out less and make fewer amendments. While sandy soil provides good drainage, you will need to add compost or topsoil to grow the plants. If your soil is heavy clay, you'll need to dig deeper and make major amendments to the soil. Otherwise, you're creating a huge bowl that will hold water, but won't drain well. Although many native plant roots grow several feet deep, helping future drainage, a rain garden needs to drain adequately from the beginning. Of course, you must also listen to your lower back. If you can't dig out a large, deep area, it may be more practical to create a smaller, deep garden.

Some "recipes" for the ideal amended soil emphasize sand, others contain large amounts of compost. Don't worry about this lack of agreement; various combinations are all effective. The great thing about gardening is that there are often many right answers. As long as you amend the soil, your rain garden will turn out just fine!

Once your amended soil is in place, you need to check drainage patterns. To judge how evenly water will fill your garden, turn on your hose and place it near the water source. This will show you where water



Rain garden in Nichols Arboretum's Gateway Garden, summer 2003

will flow and pool in a rainstorm. You can make adjustments, like digging certain areas deeper or adding a berm, so that water spreads evenly into the entire garden. After making the adjustments, let the soil drain and dry. Redo the test until the water fills the area evenly. Now you're ready to plant!

### Rain Garden Plants

When it comes to choosing plants, go native! Native plants, those that grew in this area prior to settlement, are ideal for using in rain gardens. They are adapted to thrive in our climate without any care from humans. Many natives are drought-tolerant, so you don't have to water them. However, they can also handle a good downpour and don't mind standing in water for a while. Native plants also provide food and shelter for birds, butterflies, bees and other beneficial insects.

For a list of Michigan native plants ideally suited for rain gardens, see "Ask the Experts" (p. 14). For a more complete list of all Michigan native plants, see Ann Arbor's Natural Area Preservation's website, <http://tinyurl.com/c7g7p>.

After your plants are in place, water them as you would any new plantings. (Once they are established, they will be able to thrive only with rainwater.) Finally, mulch the garden with leaves or a shredded wood to retain moisture and suppress weeds.

### Area Rain Gardens

Rain gardens are becoming more common in Michigan. Last year, the Washtenaw

County Drain Commissioner received a grant from the Michigan Department of Environmental Quality to help property owners in Ann Arbor's Allen Creek watershed create rain gardens. The City of Ann Arbor partnered on this project, contributing matching funds. This pilot project seeks to address the needs of reducing phosphorus and bacteria in the creek, and of slowing water running into the creek. Twenty rain gardens are being created for residents who applied for the program. Collecting data on the gardens' effectiveness (which requires the plants to have matured) starts this fall.

Last summer InSite Design Studio, an Ann Arbor-based landscape design firm, designed a rain garden and plan for Carrie Turner's home at 910 Bath Street in Ann Arbor. (She welcomes visitors but suggests you walk since it's a dead-end street.) Then she provided the labor. She thoroughly enjoys the garden and its benefits.

Turning to public gardens, the Gateway Garden at the Reader Center in Nichols Arboretum, is a good example. The garden includes a series of dropped pools and connecting dry creeks to capture and slow the rainwater that rushes through the garden from the cemetery and parking lots above it, preventing further erosion of School Girls' Glen below. It showcases colorful flowers and native Michigan sedges and grasses.

Another public rain garden is the Buhr Park Children's Wet Meadow at 1751 Packard in Ann Arbor. It filters storm water runoff from the park grounds, provides habitat for native plants and animals, and serves an educational site. See [www.wetmeadow.org](http://www.wetmeadow.org).

Finally, as part of its Healthy Lawns and Gardens Program, the Southeastern Oakland County Water Authority encourages area residents to create rain gardens. The City of Lathrup Village also helps residents create rain gardens. For photos of such rain gardens, see [www.socwa.org/rain\\_garden\\_registry.htm](http://www.socwa.org/rain_garden_registry.htm).