

The Plot Thickens

Rain gardens are popular, but researchers are only starting to explain what makes them effective.



Soil science professor Nick Balster is testing several different rain garden plantings to see how they handle rainwater.

Since their public introduction more than ten years ago, rain gardens—small garden plots that are designed to collect and filter storm water—have created quite a storm among environmentally minded homeowners. But as their popularity has grown, so have opinions about what makes the perfect rain garden. Many gardeners fill their plots with deep-rooted prairie plants, which they believe help water permeate the soil and replenish groundwater supplies. But some contend that turfgrasses do the job just as well.

“There are a lot of stories out there, and stories are good—they provide a starting point for science,” says soil science professor Nick Balster. “But what we

need are some repeated, controlled experiments that rise above bias.”

After fielding several calls from people looking for rain-garden advice, Balster decided to start those experiments. With graduate students Marie Johnston MS’06 and Sara Rouse, he is growing rain garden plots blanketed by soil, shrubs and prairie plants and tracking where the water they collect winds up.

So which vegetation should you plant? Balster’s answer so far: It depends.

Balster and his students have found that, contrary to popular belief, young, actively growing prairie gardens seem to let little rainwater past their roots. “When people look at their prairie gardens after a rain and see no water, they tend to think all that water went through the ground and into groundwater pools,” he says. “Our trials with residential-sized gardens suggest this may not be true. What appears to be happening in our experiments is that the prairie plants can suck a substantial amount of water up and put it back into the atmosphere.” That capacity could make prairie plants an ideal setup for trapping contaminated runoff from a parking lot, Balster says. Toxins like lead and zinc may end up staying behind in plant tissues and soil, making them easy to remove.

Turf, on the other hand, seems to act like a temporary sponge. Its shallow, dense root mass sops up rain and releases it slowly into the soil. Balster suggests this might make it a better choice for recharging groundwater, although this idea needs testing.

But sometimes the objective is simply to capture as much water as possible, regardless of whether it ends up the earth or sky. In this case, a study by horticulture professor John Stier and graduate student Jake Schneider suggests that what matters most is sizing a rain garden properly and surrounding it with a berm. “What we’ve found so far is that berms are the main factor controlling runoff,” says Schneider. “I think the bottom line is that if you put in a rain garden, it’s going to be incredibly effective at this, no matter what type of vegetation you have.”

Questions remain about how rain gardens perform as plants mature and what role root systems play in collecting early-spring or late-winter runoff, when plants haven’t broken the surface.

“Just like anything else in science, this has become a much more fun and interesting story than just ‘prairie versus turf,’” says Balster. Stay tuned.

—MADELINE FISHER

Ready to Wear ... and Eat

YOU’VE HEARD OF CARAT WEIGHT, BUT CARROT WEIGHT?

At the Dane County Farmer’s Market, students in UW-Madison’s Dietetics and Nutrition Club are teaching children about good nutrition by making farm-fresh jewelry. As they string edible bracelets, necklaces and headbands, the volunteers talk to kids about the role fresh produce plays in a healthy diet, helping them see that good eating can be good fun. Since the effort began in 2003, many elementary school teachers, day care providers and families have adopted the idea, says Kelli Truszynski BS’07. So what

makes the perfect veggie bling? Truszynski says, “We’ve used small potatoes, carrots, radishes, kohlrabi, cheese and even beef sticks.”

