

## Rain Gardens: An exciting new idea for your home or business:

Rain gardens are a way we all can help protect one of our most important resources, water.

You know, as the children's song goes... "Rain, rain go away." But the question is "Where does it go?"

Well here it does go away, soaking into this beautiful garden to become part of our groundwater. Groundwater is important because it replenishes our streams, rivers, lakes and wetlands, and most of us get our drinking water from wells that tap into groundwater.



For instance, groundwater bubbling up from a spring, with great volume is the headwaters of Token Creek, which is the most significant source of clean water to Dane County's Lake Mendota. Groundwater is also critical to rare communities such as wet prairies and fens.

However, in most of our urban environments, rain falls on roofs, roads, and parking lots – areas where it can't soak in. Gradually these impervious surfaces cause problems — as our urban areas increase, so do the problems.

With a parking lot, water moves quickly off paved areas into storm drains ... with it carrying a smorgasbord of leaves, grass, soil, oils, fertilizer - all of which end up in our lakes and streams. Urban runoff — along with runoff from rural sources — causes major problems for our water resources.



The health of our waterways depends on clean water and places for animals to hide and find food. When too much soil or fertilizer gets into our rivers and lakes, it firsts covers the bottom with a blanket of sediment smothering the insects and fish eggs, destroying the home or habitat of many animals.



This is a cobble bottom stream-- a healthy stream that has a bed with clean sand, gravel or small rocks or cobbles, important habitat for critters like the rusty crayfish and mayflies.

Crayfish and insects are at the base of the river food chain, providing food for fish and other animals.

Next the rich source of nutrients causes tremendous growth of nuisance weeds. Finally as the weeds die, bacteria, feeding on the dead matter, use up the oxygen in the water, which can lead to fish kills.

Besides the pollution, an even bigger problem for our rivers and lakes is the tremendous volume of water that rushes off of our roofs, roads, driveways and parking lots.

Streams that once caused no problems now flood more and more often. Not only is that a problem for folks in the city — in agricultural areas near cities, farm fields that in the past only flooded occasionally and only in early spring, are now flooding every year and with every heavy rain.

Streams impacted by runoff change dramatically in depth and force. These are called 'flashy'. Amazing amounts of water rush down the channel with incredible destructive power. Our response in the past was to 'control' these streams. The result is ugly and

dangerous, kids have drowned in the fast water – and its no picnic to be a river critter trying to live here with too much water one minute and not enough the next.



*The erosion shown here occurred over just a few days as several major storms hit an urban area.*

The impact of poor water quality is felt not only by the animals that live in the streams and lakes, but also by our economy. Water-based tourism brings in \$12-\$15 billion every year to Wisconsin's economy.

But when our waterways become choked with algae, it impacts boating, fishing, swimming...all those things that our tourist economy depends on.

### ***And what about you and me?***

Poor water quality effects our quality of life, our sense of who we are and where we live, our community gathering places and our enjoyment of the local resource.

Here's one reason why we have this problem: When people build houses they design them to get rid of water as quickly as possible. Builders and developers use the principal of collecting water, concentrating the flow, and conveying it quickly off the property. While this protects the home, it ends up sending the problem downstream.

For those of you who like numbers...In the growing urban area in Madison around Lakes Mendota and Monona, one large storm in 2000 caused significant flooding and property damage. Runoff volume was calculated at 5.6 billion gallons!

With the amount of urban growth that is expected for this area, it is estimated that a similar storm in the year 2020 would result in a 57% increase in the amount of water flowing into the lake or 8.8 billion gallons! That is, if we don't put in good storm water control.

What would this mean to Madison? The whole Isthmus where the Capitol is would be flooded and the locks separating the two lakes would likely be destroyed. Not to mention the property damage done to lakeside homes.

We've tried to address this by building detention ponds to collect the water and send it downstream more slowly. But these engineered practices are expensive, frequently look ugly and can become full of algae if not properly maintained.

Here's one solution that you can do – it's elegant in its simplicity. A slightly depressed garden full of native plants where rainwater can soak into the ground, replenishing groundwater and protecting our surface water.

They are rain gardens!  
\* And they do help protect and restore



natural hydrology,

- \* allowing rainwater to soak in instead of running off.
- \* They also help trap pollutants that might be in the runoff.

Rain gardens aren't only for city folks. A rain garden can go between two sheds on a farm – they can be used anywhere the amount of water running across the ground is a problem. There are also other

benefits to rain gardens – the native plants attract birds and butterflies.

They are attractive additions to property, enhancing the beauty of the neighborhood, not only in summer but in winter too. The winter seed heads can be an appreciated food source for our winter songbirds.

They're a great project for kids – teaching important lessons. Here they are installing a rain garden at Edgewood College in Madison.

And also in Madison, Centro Hispano teens are involved in a service project installing a rain garden at a local church. (*Centro Hispano is a Hispanic support center, the students are involved in an after school program.*)



### **So what exactly is a rain garden?**

It's a sunken garden,

Typically 4-6 inches deep with a flat bottom.

While any size does some good, they normally are about 1/3 of the size of what is draining to it – usually a roof, yard or driveway.

It can be wild or formal looking depending on the plants selected and the desires of the home owner.



### **Use native plants**

- The roots of native wildflowers and prairie grasses typically go twice as deep into the ground as they are tall, while turf grass roots are the same depth as the grass is kept. Therefore natives absorb much more water Uses no fertilizer
- Uses little or no pesticides
- Maintenance similar to perennial gardens
- After establishment does not need watering
- Native plants are also beautiful individually, and as a community.

More help, including a how-to build a rain garden manual, is available at your UWEX or DNR office or on the web at <http://dnr.wi.gov/org/water/wm/nps/rg/index.htm>