

Stormwater Solutions

We've all seen it in the rainy season here in the Northwest - water pooling in parking lots, coming off of roofs, running down the street and into the storm drain. Most of this water goes directly into our waterways without any treatment to filter out the contaminants it picks up along the way.

Stormwater is the leading contributor to water quality pollution of urban waterways in Washington (<http://www.psp.wa.gov/stormwater.php>). Polluted stormwater can contain contaminants that are toxic to salmon and other stream and marine inhabitants and been a factor in the closure of some Puget Sound shellfish beds and beaches.



Polluted water runs into a storm drain.

Pollution from factories or sewage treatment plants, while still a problem, is easier to manage because the pollutants come from a single location. Stormwater runoff on the other hand, picks up small amounts of pollution until it is a veritable chemical cocktail by the time it reaches our waterways.

The pollutants in stormwater runoff can come from a variety of sources, including our lawns and gardens, and that is what this month's newsletter will focus on. There are two major ways that you as a homeowner, can help reduce the impact of polluted stormwater. Once, is by reducing the amount of pollution coming from your property, and the other is by reducing the amount of water runoff from your property.

Landscaping

The easiest way to make sure that chemicals that you use for your lawn and garden aren't polluting our waterways is to not use those chemicals! There are lots of ways to keep a beautiful yard without using chemical pesticides or fertilizer.

If you mulch heavily in planted areas, it makes pulling weeds very easy. If you have weeds that need to be removed from your lawn, a weed puller is very effective. Another effective weed solution is spraying them with white vinegar (this usually works best if the vinegar is applied during warm weather when plants are "thirsty"). And for getting rid of weeds coming up through the sidewalk, driveway, or other nonflammable area, a weed torch can be used to incinerate them.

Sometimes people fertilize their lawn or garden, without considering whether their soil is actually deficient in nutrients, and if so, which. It may be obvious that your soil needs fertilizer if your plants are not thriving, but if you're not sure, a simple soil test can tell you what your soil needs. Most garden stores sell simple at home soil tests, but these are not always accurate. For really accurate results, you can send a soil sample in to a laboratory for analysis (your local Extension office will have a list of these labs).

If you find that your soil does need amendment, the best thing to use is organic fertilizer. Organic fertilizer breaks down slowly in your soil, delivering nutrients to your plants over a period of time instead of in one burst. This is healthier for your plants and the slow release action means that even if some of the fertilizer does wash off in a rainstorm, it is not as damaging to our water. Compost is another good way to boost the nutrient content of soils. If you are unable to obtain organic fertilizer or compost, slow-release fertilizer is the next best thing.

Pesky garden slugs can be caught and killed in a homemade trap by filling an empty margarine tub half full with beer (or apple juice) and sticking the tub in the ground so that the lip of the tub is level with the ground. The slugs will go in for a drink, but can't climb back out. If you have raised beds, you can put a strip of copper around the bed and slugs will not crawl over it.

Water quality problems can be caused by what we put on our lawn and garden, and they can also be caused by what our pets put on our lawn. Bacterial contamination from pet waste can cause shellfish beds and beaches to be closed. It's not a glamorous job, but the responsible way to take care of your pet's poop is to double bag it and throw it away.



A copper strip around a wine barrel planter.

Planting a buffer of vegetation between your property and the water is a great way to prevent pollution from entering the water. The plants will trap chemicals that may be in the water, and will also trap sediment that can harm water quality. Using native plants in your buffer has an added benefit of needing very little or no maintenance (fertilizer, watering or pesticide) once established and provides habitat for animals.

Trapping and Infiltrating Stormwater

Impervious surfaces (such as concrete) prevent rain from soaking into the ground and are the reason that we see rivers of stormwater running down the street when it rains. Reducing impervious surfaces and finding ways to trap rain water for later use, will allow the water to infiltrate the ground where the soil can filter out any toxins it may have picked up.

Some of the suggestions below (permeable pavers and rain gardens) will involve letting more water infiltrate your soil during a storm event. If you live on bluff property, or any other type of property where landslides may be an issue, water infiltration must be done with extreme caution. It is best to consult a hydrogeologist prior to making changes with regards to water infiltration if you live on this type of property.

Sidewalks, driveways and patios are often paved with concrete or other impermeable materials that do not allow water to pass through into the ground. There are many alternative materials that can now be used to cover such areas. Permeable concrete can be used in many situations and is porous so that water can pass through. Permeable pavers are laid like bricks and create a lattice-work that allows water to soak into the soil.

Your roof is another example of an impervious surface, and there are simple measures you can take to reduce the runoff from your roof. Rain barrels can be hooked up to your downspouts to catch rain water. Not only do rain barrels minimize the amount of stormwater runoff, they are a great way to reduce your water bill too; water from your rain barrel can be used later to water your garden.



Rain gardens are another tool for managing runoff. A rain garden is made by digging depression in the ground, then planting this depression with plants that can tolerate having their roots wet. When there is a rain storm, excess water will flow into the rain garden where it can be soaked up by the plants, or slowly infiltrate the soil. For more detailed instructions on how to build a rain garden, see the

A newly planted rain garden traps runoff from a parking lot. resources section.

Not all runoff comes from storm events. Sometimes, we are the cause of runoff. This can happen when sprinklers are not directed correctly and are spraying water on sidewalks or streets or it can happen when we wash our cars in the driveway, allowing the water to run down the storm drain. Making sure your sprinklers are only watering your plants not only reduces runoff, it saves you money. One way to avoid runoff from washing your car, is to wash your car on the lawn (make sure to use a phosphate-free soap), but this is not foolproof and if you have a septic system, it may be challenging to find a place to park your car this is not over your drain field or your septic tank. Many commercial car washes recycle the water that gets used, so not only are you not contributing to runoff, you're saving water at the same time.

Resources

City of Bremerton, Your Own Rain Barrel -

http://www.cityofbremerton.com/content/sw_makeyourownrainbarrel.html

Department of Ecology, Managing Drainage on Coastal Bluffs -

<http://www.ecy.wa.gov/programs/sea/pubs/95-107/drainsys01.html>

Department of Ecology, Stormwater webpage -

<http://www.ecy.wa.gov/programs/wq/stormwater/index.html>

King County Rain Barrel Information -

<http://www.kingcounty.gov/environment/stewardship/nw-yard-and-garden/rain-barrels.aspx>

Pacific Northwest Regional Water Program, Stormwater Management Directory -

http://www.pnwwaterweb.com/initiatives/pnw_081.htm

Puget Sound Partnership, Stormwater webpage - <http://www.psp.wa.gov/stormwater.php>

Rain Garden Handbook for Western Washington Homeowners -

http://www.pierce.wsu.edu/Water_Quality/LID/Raingarden_handbook.pdf

Washington Coalition for Alternative to Pesticide - <http://www.pesticide.org/>

Washington Toxics Coalition - <http://www.watoxics.org/>

WSU Pierce County Low Impact Development webpage (contains information on permeable pavers) - http://www.pierce.wsu.edu/Water_Quality/LID/