

Green Lawns Don't Make For "Green" Yards

Adapted from a post at DELAWARE RIVER VOICE, the blog of Maya van Rossum, the Delaware Riverkeeper

The natural world around us is awakening from a tough winter. Our yards are greening up as the weather warms, but are our yards as "green" as they could be?

All across the country, as communities have expanded and new developments have been built, the amount of land covered with a green grass carpet has grown. We have lost the native vegetation, trees and shrubs in particular, that should be present on our landscapes. As we have lost our native trees and shrubs, we have seen floodwaters rising, streambanks eroding, drinking wells running dry and water quality declining. There is a direct connection between the loss of native vegetation across our communities and what is happening to our local streams and those that live downstream.

When vegetated with native trees and shrubs, when covered in a blanket of decaying leaves, needles and wood, the land acts as a sponge. Rainwater percolates into the soil, filtering down to the water table below to re-supply the aquifers that provide our drinking water. Rainwater also provides base flow to our streams, creeks and rivers. The landscape, in this natural state, is alive with life — birds sing in the trees, squirrels dance across the ground, bugs revel in the earth. Our lives are richer and our water flows free and clean.

Not all vegetation is created equal, however. Lands vegetated only with grass cannot perform the functions of the natural landscape. Lawns don't act as sponges. Lawn mowers, heavy use and foot traffic all cause soil compaction which limits infiltration. Lawns established as part of a development have soils compacted intentionally for site engineering and construction purposes. As a result, lawns more closely resemble impervious surfaces. Like sidewalks and roadways, lawns shed rain during a storm event rather than allowing it to infiltrate.



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Resources for Making Your Yard River-Friendly

20 Ways to Protect Streams & Your Streamside Property,
Delaware Riverkeeper Network,

www.delawareriverkeeper.org/Pdf/DRNs_20Ways_to_Protect_Streams_2011.pdf

The Wild Lawn Handbook: Alternatives to the Traditional Front Lawn
Stevie Daniels

Native Plants of the Northeast: A Guide for Gardening and Conservation
Donald J. Leopold

Fact Sheet: *Natural Open Space: An Irreplaceable Community Asset*

Fact Sheet: *Plant a Rain Garden*

Both by the Delaware Riverkeeper Network

Find both at www.delawareriverkeeper.org/resources/Factsheets/

What Can You Do?

We can also have an impact with how we manage our own lands, public and private. Many of us enjoy a grassy area in our yards, a place to play, sunbathe or read. We can continue to enjoy our spot in the sun, but we can also reduce the total amount of lawn we maintain.

- Start by re-vegetating little used grassy areas. Plant native plants. Add a garden. Consider adding a perimeter of native trees, shrubs, and flowering plants. Doing so not only beautifies our gardens, increases the value of our homes, provides shading to cool homes in the warm summer months reducing cooling costs, and provides a visual and noise buffer that can enhance our quality of life, but it provides flood and pollution prevention and protection to our downstream neighbors.
- We should all advocate that the towns we live in and the schools in our communities use these same practices.
- For those of us who have streams in our yards, it is vitally important that we take on the added obligation of protecting and/or putting in place wide vegetated buffers filled with native trees, shrubs and plants that will prevent streamside erosion, help reduce flood flows and peaks, and can help filter out pollution found in the creek.

Through simple landscaping practices we can improve local water quality, contribute to flood relief for downstream communities, provide habitat for birds and wildlife, bring privacy and peace to our own back yards while still allowing for the lawns many people so love to mow.



Some More Helpful Information

Lawns generate significantly more stormwater runoff than meadow, scrub vegetation or forests. What's more, runoff from our lawns is often carrying with it any excess or improperly applied fertilizers and pesticides. This runoff is channeled, usually by roads, to a nearby storm drain, which is likely receiving runoff from other lawns, roadways and communities. Stormwater runoff travels through storm sewers to a local creek where it combines with the runoff from all other upstream communities.

The bulk density of soil — the mass of a dry soil divided by its volume, and expressed as grams per cubic centimeter (gms/cc) — can provide an estimate of its compaction. Bulk density increases as soil becomes more compact. Not surprisingly, lawns can have high bulk densities, from 1.5 to 1.9 gms/cc, rivaling that of concrete which has a bulk density of 2.2 gms/cc.

Our stream channels are being scoured by fast-moving stormwater. Streambanks are being eroded and, when they have been cleared of vegetation or are maintained as close cropped lawn, they are particularly susceptible. The eroded sediments turn our streams a chocolate brown, depriving fish and plants of light. When the sediment settles out of the water column, it smothers the streambed where aquatic insects live and where fish lay their eggs.

More and more frequently, downstream communities are suffering the effects of the loss of open space and vegetation upstream. These downstream communities are experiencing higher and more frequent flooding caused by increasing stormwater flows. Communities are bearing the brunt of the loss vegetation. And both upstream and downstream communities include among their vegetation clearing practices, the streambanks and floodplains that could otherwise serve as part of a protective solution. Wide forested buffers and vegetated floodplains can serve as a place for holding and filtering floodwaters and runoff, their roots prevent erosion of public and private lands, and they provide the habitat that ensures healthy bugs and fish that actually help cleanup pollution that has already entered our streams. The combination of cleared lands throughout the watershed, and denuded, or barely vegetated, streamside lands and floodplains packs a powerful combination punch of harm.

Stormwater detention basins, as they are presently constructed, do little to alleviate problems associated with runoff, and they can, in fact make problems worse. These basins serve only to reduce peak flows of stormwater runoff, and ultimately prolong the harmful impacts of a storm event on our streams and on downstream communities. Planting our stream corridors more with vegetation, especially trees and shrubs, could moderate the effects of increased stormwater runoff.

¹ Schueler, T. 2000. The Compaction of Urban Soil: The Practice of Watershed Protection. Center for Watershed Protection, Ellicott City, MD. Pages 210-214.