



PROHORT

FACT SHEET

Solutions for Commercial Horticulture Professionals

Why Point the Finger at Nonpoint Source Pollution: Managing Urban Runoff and Pollution

By Susan Haddock, Commercial Horticulture/Integrated Pest Management/Small Farms Agent

Over the last two decades, and especially recently, attention is being focused on stormwater pollution related to urbanization. This is because urbanization produces a wide variety of pollutants and a large amount of runoff.

A much greater percent of land area is covered by structures and impervious pavement in urban areas. These rooftops, parking lots and roads prevent rain from soaking into the ground. Natural areas such as wetlands, forests and grasslands hold rainwater locally and allow slow percolation through the soil and plant material, which act as a filter for pollutants. Urban areas have little ground water recharge, due to loss of stormwater infiltration.

In urban areas, most of the rainfall remains above ground. Urban areas are designed with storm drains that carry unnaturally large amounts of stormwater to water bodies. As storm drains transport pollutants to ponds, streams, rivers and bays, the runoff gains speed and when dumped into the water body the runoff causes bank erosion, damages vegetation and destroys aquatic habitat. Pollutants such as oil, chemicals, heavy metals, landscape fertilizers and pesticides, trash and soil are carried with the stormwater to water bodies. These pollutants adversely affect water quality.

The higher water temperature of urban runoff caused by pavement heat raises the overall temperature of water bodies. Urbanization increases flooding during rainy seasons and contributes to lower stream and river levels during dry seasons. These conditions are harmful to aquatic life.

So, what can be done to manage urban stormwater runoff and pollution? The measures listed below can help mitigate the adverse effects. Some of these measures are much easier to implement prior to urban construction, while others can be implemented at any time. Some measures are simply practicing environmental stewardship, while others may be required by law.

1. Buffer strips

A turfgrass or riparian (forested) buffer between impervious paved areas and the closest water body will help reduce erosion, improve soil retention, filter pollutants and sustain ecosystems and habitats.

2. Retention ponds

Man-made basins create an aquatic buffer that captures stormwater runoff from a higher elevation and filters pollutants before they enter local streams, rivers and bays. The pollut-



ants are trapped in the pond and settle out. Retention ponds can provide an aesthetically pleasing view for homeowners and an attractive environment for fish, waterfowl and other wildlife. However, retention ponds may receive excessive nutrient runoff from landscapes. High nutrient levels contribute to the production of algae which, can deplete oxygen levels and disrupt natural food sources for wildlife.

3. Porous pavement

Using alternative construction materials such as pervious concrete, pavers, turf block pavers and gravel reduces the amount of direct runoff into water bodies. Use of pervious pavement is a Best Management Practice recommended by the Environmental Protection Agency for the management of stormwater runoff.

4. Preservation and restoration projects

Preserving or constructing wetland or riparian areas will slow runoff and absorb pollutants. Planning that preserves existing areas is much more cost-effective than restoring a damaged or ineffective area later.

5. Implement protective measures at construction sites

Sediment or silt fences reduce offsite movement of soil. Laying grass or straw over exposed soil reduces erosion.

6. Septic system maintenance

Septic systems should be inspected and pumped every three to five years. Water conservation measures extend the life of septic systems.

7. Pet waste management

Pet waste contains bacteria, parasites and nutrients, which when left on the ground can wash into storm drains and runoff to nearby water bodies. Bacteria and parasites can harm aquatic life, and nutrients contribute to the growth of algae.

8. Manage individual pollutants

Check vehicles and equipment for leaks and recycle motor oil and antifreeze. Properly dispose of unwanted or out-of-date chemicals, pesticides and fertilizers.

9. Implement the *Green Industries Best Management Practices (GI-BMP)*

The goal of the GI-BMP is to promote the reduction of non-point source pollution and the efficient use of water, by:

- Reducing off-site transport of sediments, nutrients and pesticides.
- Using appropriate site design and plant selection.
- Using appropriate rates and methods of applying fertilizer and irrigation.
- Using integrated pest management to minimize pests and apply chemicals only when appropriate.

10. Adhere to local and state fertilizer use and landscape management rules

Hillsborough, Pinellas and Manatee counties have fertilizer use and landscape management rules in effect with specific rules and recommendations for fertilizer use and landscape management. These ordinances apply to all individuals who apply fertilizer to urban landscapes, including homeowners, commercial applicators and governmental and institutional employees. Commercial applicators and governmental and institutional employees are required to have GI-BMP certification.

GI-BMP information, including a free downloadable educational manual, can be found at <http://fyn.ifas.ufl.edu/>. You can view or download the Hillsborough County landscape and fertilizer ordinance at <http://epchc.org/>.

Susan Haddock, Commercial Horticulture/IPM/Small Farms Agent Hillsborough County Extension Service
(813)744-5519 ext. 54103 szcrmchz@ufl.edu ProHort.net

Hillsborough County Extension is a cooperative service of Hillsborough County Board of County Commissioners and the University of Florida.
 The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution.

5339 County Road 579 Seffner, FL 33584 | 813- 744-5519 | <http://hillsborough.extension.ufl.edu>