



# Gardens and Gutters

## A Central New Yorker's Guide to Managing Stormwater Runoff

### Free-Falling Fall Fertilizer Frenzy Saves Time and Money

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Autumn in Central New York is a beautiful time of year. Few things rival the sight of colorful foliage against a deep blue sky. Unfortunately, Autumn is fleeting and sooner rather than later, all those beautiful, brightly colored leaves will fall and we'll be faced with the age old question of what to do with all that mess. In many neighborhoods, it's common practice to rake or blow leaves into piles along the road for municipal pickup. Besides being tiresome work, this practice can create a number of unforeseen problems. When it rains, loose leaves on wet roadways create a safety hazard for drivers. They can also wash into storm drains clogging storm sewers and creating roadway flooding. Leaves decaying on the street or that get washed into lakes and streams release nutrients such as phosphate that impacts water quality. There is another way to deal with autumn leaves that saves time, money and your back.

Landscapers, horticulturalists and homeowners understand that leaves are a valuable resource that shouldn't go to waste. Instead of raking and removing leaves from your yard, consider mulching them with your lawn mower and leaving the pieces in place to decompose. Shredding your leaves with a mulching mower will reduce their volume and speed up decomposition time. Up to 3/4" deep of shredded leaves can be applied to your lawn. Leaf mulch recycles nutrients into your soil to feed your plants, improve soil health, and helps to retain moisture thereby reducing the need to water in dry spells. Shredded leaves that are left in place will improve the vigor and appearance of lawns by returning organic matter and nutrients to the soil.

Use your autumn leaves to cover the soil in your vegetable garden during the winter and to protect cold-hardy vegetables like carrots, kale, leeks and beets for extended winter harvest. In the spring, the leaves will add organic matter and nutrients to the soil. Decaying leaves use up soil nitrogen, so be sure to add an organic source of slow-release nitrogen, like composted animal manure, before planting.

Also consider leaving whole leaves in place in wooded areas and scrubby margins. Maintaining some leaves along the edges of the yard provides over-wintering areas for many important beneficial insects and small animals. Keep total mulch depth to three inches or less and don't let mulch touch tree trunks or the base of shrubs as this can encourage pests and disease.

The leaf layer will create its own micro-ecosystem. Many wildlife species live in or rely on the leaf layer for food and habitat, including salamanders, chipmunks, box turtles, toads, shrews, earthworms, and many insect species. Many butterfly and moth species also overwinter as pupae in leaf litter. Leaf mulching and leaving leaves alone in margin areas will increase your soil fertility, provide habitat and food for wildlife, and will provide time for you to enjoy the autumn!

Remember, it's illegal to burn leaves anywhere in New York State. The smoke from burning leaves contains dangerous compounds. The smoke can irritate your lungs and is especially harmful to children, the elderly and anyone with respiratory or cardiovascular disease. Leaf burning is also prohibited because it can spark accidental brush, forest or house fires.

So if you're looking for some good excuses to avoid yard work this fall, just remember ... don't fuss with leaf raking and removal. Mulching or shredding the leaves is a simple solution and can save you time and money.



## Leaf Mulching and Soil Health

The trees, shrubs, perennials and annuals in your garden and landscape are gradually responding to the shorter days and cooling temperatures of autumn. Many plants are forming flower buds that will bloom next spring. Some are starting to reveal their fall colors and others are just starting to look a bit tired. Gardeners respond to these conditions by putting out pruners, rakes and blowers to work moving leaves, stems, spent flowers to the street to the street for municipal collection.

Research conducted at numerous universities over the past thirty years has shown that leaves shredded by lawnmowers and left on lawns will improve the vigor and appearance of lawns by returning organic matter and nutrients to the soil.

Mulching or shredding the leaves in-place is a simple solution and can save you time and effort. The Cornell Waste Management Institute reports that mulching leaves in place provides the following range of benefits:

**Saves Effort:** Gardeners, landscapers and homeowners find that mulching leaves in place is easier than raking, bagging or blowing them to the curb.

**Maintains and Improves Soil Health:** Leaf mulch recycles nutrients into your soil to feed your plants and introduces additional organic matter into the soil to help retain moisture .

**Saves Energy and Reduces Pollution:** Transporting and disposing of leaves from your curb wastes energy and contributes to pollution. Mulching leaves in place reduces greenhouse gas emissions in your local community.

**Saves Money:** By recycling nutrients back into the soil, you will improve the vigor and appearance of your lawn and garden naturally and may find that you need to purchase and apply chemical fertilizer less frequently.

**Provides Critical Habitat:** Left in place, especially along scrubby edge areas, a layer of leaves is its own mini-ecosystem. Many wildlife species line in or rely on the leaf layer to find food and habitat, including salamanders, chipmunks, box turtles, toads, shrews, earthworms and many insect species. Many butterfly and moth species overwinter as pupae in leaf litter.

### Tree and Shrub Maintenance Calendar

#### OCTOBER

- Keep plants properly irrigated
- Purchase plant wraps and protectors in preparation for the cold weather
- Transplant trees and shrubs following specific needs of the species.
- Winterize lawn equipment before storage
- Place protection around the base of fruit trees to prevent damage due to mouse and rabbit activity
- Before bringing your houseplants inside for the winter, check them for pests such as whitefly and mealybug
- Adult stage ticks can still carry disease and may still be present. Continue to check for ticks after nature walks and yard work
- Collect a soil sample and have it tested to determine soil nutrient and pH needs for the coming year

#### NOVEMBER

- Tie up limbs of arborvitae and juniper to prevent damage from excessive snow loads
- Begin dormant season pruning
- Wrap or cover plants with mulch to protect them from winter freezing, wind and salt damage
- Make sure soil for evergreen plants is moist as the temperatures approach freezing
- Make sure outdoor water pipes and irrigation systems are shut off and drained to prevent freezing and damage

(Source: Bartlett Tree Experts newsletter)



Leaves placed in road ditches, storm gutters or storm drains wash directly into our lakes and streams where they release nutrients and destroy aquatic habitat. When placing leaves out for municipal pick-up, place the leaves on the edge off your lawn to help keep them in place. Avoid damaging your lawn by checking your municipality's pick up schedule . Placing the leaves close to the collection date will keep your grass looking good .

## Soil Testing: Why, When and How

A soil test is important for several reasons: to optimize crop production, to protect the environment from contamination by runoff and leaching of excess fertilizers, to aid in the diagnosis of plant culture problems, to improve the nutritional balance of the growing media and to save money and conserve energy by applying only the amount of fertilizer needed. (*University of Massachusetts Amherst, Center for Agriculture, Food and the Environment*)

Garden soil can be tested at any time of the year, but it is best to avoid sampling when the soil is wet as samples need to be dry for analysis. It's highly advisable to sample your soil BEFORE planting your garden. The results of your test will not only advise which amendments you must add to get the soil ready for the optimum plant growth, it may also indicate the necessity of growing your garden in a different location. Soil testing during the growing season is an important tool for managing crop nutrition.

Before any of these benefits can be realized, you have to know how to take the soil and what to do with it once you have it. For that, we turned to Cornell Cooperative Extension of Onondaga County for answers to common questions and guidance.

### How to Take a Soil Sample

#### 1. When should soil be sampled?

Soil samples can be taken at any time during the year; however, avoid extremely wet soil conditions unless absolutely necessary.

#### 2. How often should I have my soil tested?

For most crops, every 2 to 3 years. Soil under intensive cultivation may require annual testing. Sampling from any given area should be done at about the same time as in previous years.

#### 3. What tool shall I use for sampling?

A soil probe or auger is best; if not available, use a garden spade or shovel.

#### 4. What is the proper sampling depth?

*For cultivated crops and gardens*, sample at 0 - 1" and another at 1 - 6" depth.

*For lawns and pastures*, a sample from the upper 6" is satisfactory; remove plant residue.

*For tree and fruit crops*, 2 samples should be submitted, one taken at 0 - 8" depth, the other at 8 - 16" (subsoil layer).

#### 5. How do I go about collecting the sample?

With a shovel, dig a hole to the sampling depth. Cut a ½" slice from the face of the hole and trim the sides so you have a vertical slice of soil.

#### 6. How many sub-samples should I collect from each area?

Repeat the sampling process in about 10 - 15 locations throughout the garden or field. Mix the sub-samples in a plastic bucket to obtain a representative composite sample. Avoid sampling in unusual areas if the objective is to estimate average fertility levels over the entire area.

#### 7. What if I have an area of poor crop growth?

If you have a trouble spot, a separate sample taken from this area may be necessary.

#### 8. Should the sample be dry?

Do not bring in wet samples. If it is necessary to sample wet soil, spread the sample on a sheet of newspaper and allow it to dry at room temperature.

#### 9. How much soil is needed for each composite sample?

About two cups are required.

#### 10. Where do I bring samples?

CCE Onondaga can provide you with the forms and cardboard box to mail your sample. You will mail your sample to the Cornell Lab. For more details on available tests, and to download the forms required for each, please visit our page on "Soil Testing Services".

#### 11. What information needs to accompany the samples?

*For gardens, lawns, trees:*

Site characteristics

Crop to be grown

Age of crop

Fertilizer used

Manure rates applied

#### 12. How long will it take to get test results?

Tests take about 1 - 2 weeks. Results are mailed from the lab directly to you, and a copy also is sent to our office.

#### 13. What if I have questions about the results?

Call Onondaga County Cooperative Extension at (315) 424-9485.

#### 14. How much does the test cost?

Costs for test vary depending on type. Please see prices listed on the lab forms.

Michigan State University Extension advises to not fertilize perennials in late summer or early fall. This may cause the plants to flush-out additional growth that will not harden-off in time for an early winter freeze.

## Time to Get Ready

**RAIN BARREL STORAGE:** October is the cruelest month. Most of us spend time enjoying peak foliage, clear skies, crisp air and we feel a little safe knowing that winter is still several weeks away. And then, it happens. Our first snow of the season. Like it or not, late October normally brings the first snow of the season. Don't get caught off guard. Now is the time to prepare your rain barrel for winter storage.

If you have the space, unhook the rain barrel from the downspout and store it in a garage or shed. If space isn't available, you can leave the rain barrel outdoors during the winter if you prepare it for the elements.

First, completely drain the rain barrel to avoid freezing or cracking. Then remove the spigots, screen, and hose and store them in a place where you can find them easily in the spring. You may also want to rinse out the rain barrel in order to remove any sediment. If you are storing the rain barrel outside, turn it upside down to keep out the rain, ice and snow. If possible, weight it down or secure it to keep it from blowing away. After you've prepped the rain barrel for winter storage, consider redirecting the downspout so that melting snow and ice flows away from the foundation of your home. Attach another piece of downspout if necessary.

**PET WASTE:** When pet waste is left on the ground, rain or melting snow transports it to local lakes and streams where it can negatively affect water quality. The waste contains fecal coliform bacteria and parasites which can spread diseases and harm human health. Dog waste also contains nitrogen and phosphorus which can harm plants and fish in local lakes and streams. In fact, dog waste has higher phosphorous concentrations than cow and swine manure. For these reasons, dog waste is cited as a major contributor of pollution in urban watersheds.

Please help to keep our local lakes and streams clean by picking up after your dog. Always remember to carry a plastic



bag with you when you take your dog for a walk and use it to pick up the pet waste. Be sure to continue this practice throughout the fall and winter months, even during snowy conditions. This will avoid the cumulative impacts to local water resources during periods of spring snowmelt.

**TIME TO CLOSE THE SWIMMING POOL:** If you're lucky enough to have a swimming pool, that you are still enjoying, it's time to close it up before all those beautiful leaves make the job so much worse than it already is.

An average swimming pool holds 19,000 gallons of water that may contain chlorine, biocides, algacides, and other chemicals. When swimming pool water is drained for cleaning or maintenance, these chemicals can be toxic to plants and animals in nearby lakes, streams, and wetlands.

Before draining the pool, use a test kit to check the water quality. Allow the pool water to sit for several days after the last addition of chlorine or bromine or wait until the levels are below 0.1 mg/l. Do not discharge the pool water into the environment if algacides such as copper or silver have recently been used or if the pool water appears murky.

Pool discharges should be done slowly to prevent soil erosion, flooding, or damage to adjacent properties. Never discharge pool water onto paved surfaces, directly into the storm sewer system, or in areas where it can flow directly to rivers, lakes, streams, or wetlands.

## Phosphorus: A Four Season Threat to Water Quality

Phosphorus is one of the leading causes of water pollution in Central New York. One of the primary sources of phosphorus is lawn fertilizer. Excess phosphorus in freshwater lakes and ponds can cause algae overgrowth, with serious impacts to the environment and public health.

- Heavy mats of algae deplete the water of oxygen that fish need to survive.
- Algae overgrowth makes water recreation unpleasant and potentially harmful.
- Algae growth may cause carcinogens to form in drinking water during chlorination.
- Phosphorus feeds blooms of toxic algae, creating health risks to people and animals.

Across the state and throughout the country, communities that operate Municipal Separate Storm Sewer Systems (MS4s) that discharge to waters impaired by phosphorus, such as Onondaga Lake, are working to reduce the amount of phosphorus leaving their systems. This is an important effort that supports water quality standards for drinking, fishing, swimming, and other non-contact recreational uses, such as boating.

MS4s have limited options for reducing phosphorus: they can implement very costly stormwater retrofit projects, or they can work with their residents, businesses and commercial entities to reduce or eliminate the use of phosphorus that can make its way into our lakes and streams. Source reduction is significantly more cost effective and efficient than retrofitting.

A New York State law prohibits the use of lawn fertilizer containing phosphorus for any use other than establishing a new lawn. Because phosphorus is naturally occurring in CNY, supplemental phosphorus fertilizers are typically not needed to maintain healthy lawns. When you or your neighbor applies phosphorus fertilizer where it is not needed, the fertilizer, and your money, wash off of your lawn and flow into nearby lakes, ponds and streams when it rains.

Support municipal efforts to protect and improve water quality and responsible spending by getting on board with zero phosphorus lawn care.

Learn more, then take action. The following websites will help you get started.

- **General information on the phosphorus runoff Law:**

[www.dec.gov/chemical/67239.html](http://www.dec.gov/chemical/67239.html)

- **Frequently asked questions about lawn fertilizer:**

[www.dec.ny.gov/chemical/74885.html](http://www.dec.ny.gov/chemical/74885.html)

- **Green lawns and gardens**

[www.dec.ny.gov/public/44290.html](http://www.dec.ny.gov/public/44290.html)

- **Blue-green harmful algal blooms**

[www.dec.ny.gov/chemical/77118.html](http://www.dec.ny.gov/chemical/77118.html)

- **CNY Stormwater Coalition**

[www.cnyrpd.org/stormwater](http://www.cnyrpd.org/stormwater)



*Keep them clean, not green. Choose phosphorus free lawn care to protect our lakes and streams.*

## CNY Stormwater Coalition

The CNY Stormwater Coalition was formalized in 2011 in order to establish a regional approach for stormwater management and water resource protection. The Coalition is made up of 29 local governments and the NYS Fairgrounds. Each member operates a Municipal Separate Storm Sewer Systems (MS4). Through the Coalition, members are working together to meet regulatory requirements while improving water quality.

### CNY STORMWATER COALITION MEMBERS

Camillus Town  
Cicero Town  
Clay Town  
DeWitt Town  
Geddes Town  
Hastings Town  
LaFayette Town  
Lysander Town  
Manlius Town  
Marcellus Town  
Onondaga Town  
Pompey Town  
Salina Town  
Sullivan Town  
Van Buren Town

Baldwinsville Village  
Camillus Village  
Central Square Village  
East Syracuse Village  
Fayetteville Village  
Liverpool Village  
Manlius Village  
Marcellus Village  
Minoa Village  
North Syracuse Village  
Phoenix Village  
Solvay Village  
Syracuse City  
Onondaga County  
NYS Fairgrounds

### Stay Up To Date with the CNY Stormwater Coalition Website

The CNY Stormwater Coalition normally meets quarterly throughout the year. Meetings are held on Tuesday afternoons at various municipal buildings around the region. All meetings are open to the public, and your attendance and participation are always welcomed! Currently,

Coalition meetings are on hold due to COVID-19. Until it is safe to return to a normal meeting schedule, we invite you to stay updated on municipal stormwater management efforts by visiting the [CNY Stormwater Coalition website](http://www.cnyrpd.org/stormwater).



The CNY Stormwater Coalition is staffed and coordinated by the Central New York Regional Planning & Development Board. For more information, visit the CNY Stormwater website at [www.cnyrpd.org/stormwater](http://www.cnyrpd.org/stormwater)



Central New York Regional Planning & Development Board

## Onondaga County Stormwater

### Pollution Hotline

Any discharge into a storm drain system that is not composed entirely of stormwater is called an illicit discharge. Illicit discharges to storm drain systems are a problem because unlike sanitary sewer systems which flow to a wastewater treatment plant, storm sewers flow directly to waterways without any additional treatment. Illicit discharges often include pathogens, nutrients, and various toxic pollutants.

If you suspect someone has discharged contaminants such as chemicals, construction materials, paint, or petroleum products to a storm sewer, catch basin, or roadway, please contact the **Onondaga County Stormwater Pollution Hotline at 435-3157**. The hotline is manned 24-hours a day, seven days a week.

### HAPPY NEW YEAR!

October 1 is the first day of the water year. Unlike the calendar year, the water year begins and ends during the driest season when groundwater aquifers are largely drawn down due to irrigation, evapotranspiration and decreased precipitation during the last and hottest months of summer. The Water New Year marks the start of aquifer recharge season which reaches its peak when the winter snow pack melts and more frequent rain events return again in the spring.



Photo: Elizabeth Bertuch

*“Water is the most critical resource issue of our lifetime and our children’s lifetime. The health of our waters is the principal measure of how we live on the land.” – Luna Leopold*