



CNY Stormwater Coalition

Gardens and Gutters

A Central New Yorker's Guide to Managing Stormwater Runoff

Volume 3 Issue 2

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Looking for Blue and Seeing Green?

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Nutrient pollution, caused by nitrogen and phosphorus, is one of America's most widespread, costly and challenging environmental problems.

Phosphorus is a nutrient that is a natural part of aquatic ecosystems. It supports the growth of algae and aquatic plants, which provide food and habitat for fish, shellfish and smaller organisms that live in water. When too much phosphorus enters the environment - usually from a wide range of human activities - the water can become polluted. Phosphorus, which is naturally occurring here in CNY, poses a more frequent threat to regional water quality than nitrogen.

A primary source of supplemental phosphorus in CNY is lawn fertilizer, which is ironic as most soils in CNY naturally have adequate levels of phosphorus to support a healthy lawn without the addition of supplemental phosphorus fertilizer.

Too much phosphorus in the water causes algae to grow faster than ecosystems can handle. Significant increases in algae harm water quality, food resources and habitats, and decrease the oxygen that fish and other aquatic life need to survive. Large growths of algae are called algal blooms and they can severely reduce or eliminate oxygen in the water, leading to illnesses, and even the death of large numbers of fish. Some algal blooms are harmful to humans because they produce elevated toxins and bacterial growth that can make people sick if they come into contact with polluted water, consume tainted fish or shellfish, or drink contaminated water.

Across NYS and across the country, efforts to control nutrient pollution are improving the health of our waterways and the quality of our lives.

This edition of *Gardens and Gutters* is focused on phosphorus and the many ways that we can all help to reduce nutrient pollution on a daily basis. It's easy. It saves money. It's important. And now, it's the law!



Above: Oneida Lake is a popular CNY tourist and recreation destination. Toxic algal blooms, which can cause skin and eye irritation to people and be fatal to pets and wildlife, have closed beaches, disrupted tourism, and hurt local businesses. Photo: Carol Bednar

New State Law to Improve Water Quality

A New State Law Restricts the Use of Lawn Fertilizer

Phosphorus is a nutrient that is essential for plant growth, but high levels can degrade water quality, making it unhealthy for people and aquatic life. Phosphorus is often transported by stormwater runoff into lakes, streams and wetlands. As of January 2012, a new state law is helping to improve water quality by reducing the use of phosphorus fertilizer. Better water quality will improve recreation and other uses of our freshwater resources. The law will also reduce costs to local governments and private entities that are required to remove excess phosphorus from stormwater and wastewater.

The new phosphorus law restricts the use of lawn fertilizer in the following ways:

- The use of phosphorus lawn fertilizer is prohibited unless establishing a new lawn or a soil test shows that the lawn does not have enough phosphorus.
- The application of lawn fertilizer is prohibited on impervious surfaces. The law requires that fertilizer applied or spilled onto impervious surfaces be picked up.
- The application of lawn fertilizer is prohibited within 20 feet of any surface water except where there is a vegetative buffer of at least 10 feet, or where the fertilizer is applied by a device with a spreader guard, deflector shield, or drop spreader at least 3 feet from the surface water.
- The application of fertilizer containing nitrogen, phosphorus or potassium is prohibited between December 1st and April 1st.
- Retailers are required to display phosphorus containing fertilizers separately from non-phosphorus fertilizers, and to post an educational sign where the phosphorus fertilizers are displayed. Additional information is available at the NYS Department of Environmental Conservation website at www.dec.ny.gov

The law applies to the use of phosphorus fertilizer that has more than 0.67% phosphorus by weight (EVEN IF IT WAS PURCHASED OUT OF STATE) and includes organic phosphorus fertilizer. The provision does not impact the use of agricultural fertilizer or fertilizer for gardens.

Why this law is Important

According to NYSDEC, over 100 waterbodies in NYS are impaired due to high levels of phosphorus. The list includes Onondaga Lake. "Impaired" means that use of the waterbody is negatively affected by a pollutant.

This law is designed to reduce the level of phosphorus in lawn fertilizer. In many areas of NYS, soils naturally contain a sufficient amount of phosphorus to support the growth of turf grass without the need for additional fertilizer. The law also prohibits the sale of phosphorus containing dishwasher detergent for household use and for commercial use.

Phosphorus Sources and Environmental Impacts

Phosphorus can originate from wastewater treatment plants, failing septic systems, agricultural runoff, decomposing yard waste, soil particles, and pet waste. High levels of phosphorus can damage the aquatic environment by accelerating algae and rooted plant growth which makes water look and smell bad. When plants and algae die and decompose, the oxygen concentration in the water decreases. This condition harms fish and other aquatic organisms.

Additional Ways to Reduce Phosphorus Runoff

- Test your soil before applying fertilizer and use the results to determine the correct application rate.
- Never apply fertilizer before a rain storm.
- Pick up after your pet and properly dispose of the waste. Never dispose of pet waste in storm drains or ditches.
- Mow your lawn at regular intervals and leave grass clippings on the lawn. Use a compost pile for yard waste such as leaves.
- Cover exposed soil and mulch to prevent erosion.
- Plant a rain garden to slow the rate of stormwater runoff.
- Use native plants in your landscape. They require less maintenance, pesticides and fertilizers.
- Plant a buffer strip along the shoreline of lakes and streams to slow stormwater runoff, absorb excess nutrients, and reduce soil erosion.

All lakes need protection from the pollution that robs them of oxygen and aquatic life. We can't do anything about nutrients from natural sources or the warmth of the sun, but we can work to prevent excessive nutrients and sediments from human activity from getting into our lakes.

New State Law to Improve Water Quality

Selecting the Correct Fertilizer for Your Lawn

Labels on fertilizer bags contain three bold numbers. The first number is the amount of nitrogen (N), the second number is the amount of phosphorus (P), and the third number is the amount of potassium (K). A bag of 10-5-10 fertilizer contains 10 percent nitrogen, 5 percent phosphorus, and 10 percent potassium. The law limits the amount of phosphorus to less than 0.67%. Therefore, the phosphorus number (the middle number) should be less than 0.67 for the product to meet the phosphorus lawn fertilizer restriction. Lawn fertilizer with phosphorus levels of 0.67 or lower are not restricted. Products with a number higher than 0.67 may only be used if a new lawn is being established or if a soil test indicates that phosphorus levels in the soil are low.



Options for Testing Your Soil

Nutrient levels in the soil can be determined by using a home test kit or by having the soil tested at a laboratory. The NYS DEC recommends that soil tests be done at a laboratory because the results tend to be more accurate and most labs will provide helpful recommendations on fertilizer application rates. You can find a soil testing laboratory by checking with your County Cornell Cooperative Extension office.

Vegetative Buffers Protect Water Resources

The new phosphorus law refers to the use of shoreline buffers. A buffer strip is a piece of land with trees, shrubs, legumes, or grasses located along the shoreline of a lake or stream. The buffer reduces nutrients and other pollutants entering the water. Vegetative buffers also stabilize soils with plant root systems, reduce shoreline erosion due to wave action, and improve wildlife and fish habitat by providing food, shelter, and shade.

The interrelationship between a lake and its shoreline is important. The shoreline zone is the last line of defense against the forces that may otherwise destroy a healthy lake. Development around lakes has resulted in the removal of trees, shrubs and other protective vegetation, and an increase in the amount of impervious area in the lakeside landscape. Native vegetation, with its deep root systems and natural duff layer, acts like a sponge to hold stormwater runoff and associated nutrients.

Impervious surfaces result in more stormwater running directly into the lake. Stormwater runoff picks up pollutants like soil sediment, nutrients and chemicals that can be detrimental to lake water quality. These enter lakes and can affect the nutrient balance of the water creating an environment suitable for invasive or nuisance aquatic plants to root. Silt can cover fish eggs and spawning habitat, as well.

Maintenance and restoration of shoreline vegetation allows native plants to fill in the shoreland zone and increase biodiversity, wildlife habitat and protect property values. After the initial installation of the riparian buffer, relatively little maintenance needs to be performed to keep the buffer in good condition. Once the trees and grasses reach maturity, they regenerate naturally and make a more effective buffer.



The Facts About Nutrient Pollution

Sources of Phosphorus Pollution

The primary source of phosphorus pollution is runoff containing fertilizers and animal manure, sewage treatment plant discharges, combined sewer overflows, urban and suburban stormwater runoff, and failing septic tanks. Phosphorus from row crops and concentrated animal feeding operations also contribute to water pollution.

Effects of Nutrient Pollution

Economic Impacts

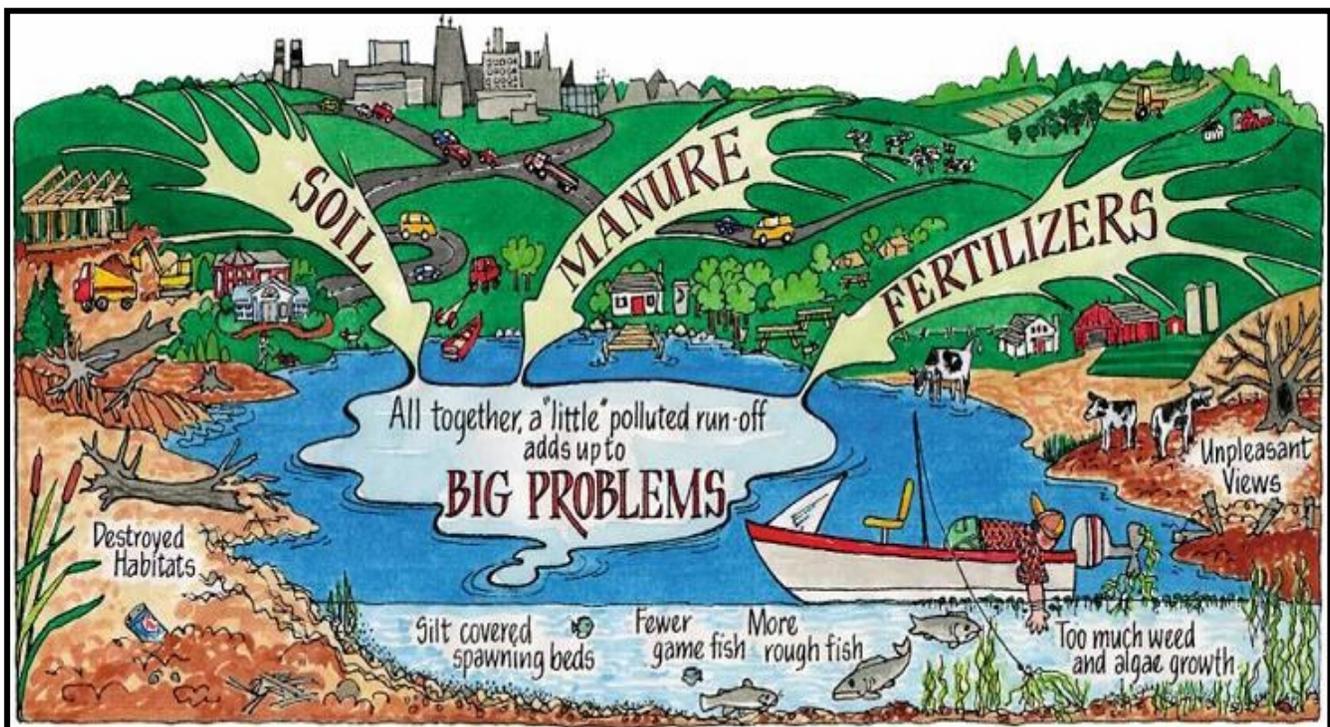
Excessive phosphorus in water can cause health problems, damage our waters, and take a heavy toll on the economy in the form of lost tourism, fishing, and recreation dollars spent in our communities. Many local municipalities are required to manage and reduce the amount of phosphorus discharged through their storm sewers. Voluntary efforts undertaken by residents to control phosphorus discharges, such as using zero phosphorus lawn fertilizer, picking up pet waste, and washing cars on lawns or at commercial car washes are critical cost saving measures for local governments. If successful, these efforts will eliminate the need for local governments to develop and implement costly retrofit projects on public property, which ultimately must be paid for by our tax dollars.

Human Health Impacts

Phosphorus can lead to a massive overgrowth of algae, known as an algae bloom. Certain types of algae emit toxins. Coming into contact with these toxins can cause stomach aches, rashes and more serious problems for humans. Chemicals used to treat nutrient-polluted drinking water pose additional risks to human health. These chemicals, including chlorine, can react with the algae in the water to form disinfection by-products that have been associated with reproductive and developmental health problems.

Environmental Impacts

Phosphorus pollution damages the environment and harms water quality. Algal blooms consume large amounts of oxygen that fish, shellfish and other aquatic organisms need to survive. They make water cloudy, reduce the ability of aquatic life to find food, and clog fish gills. Toxins in some algal blooms can sicken or kill pets, marine mammals, fish and shellfish.

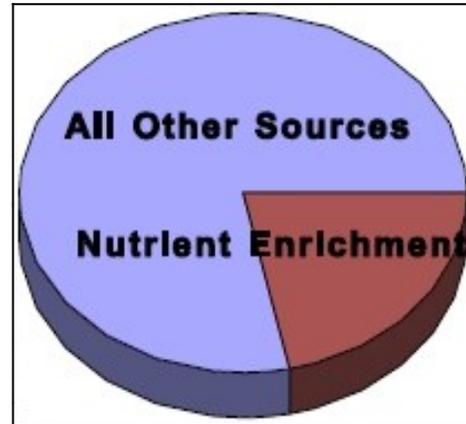
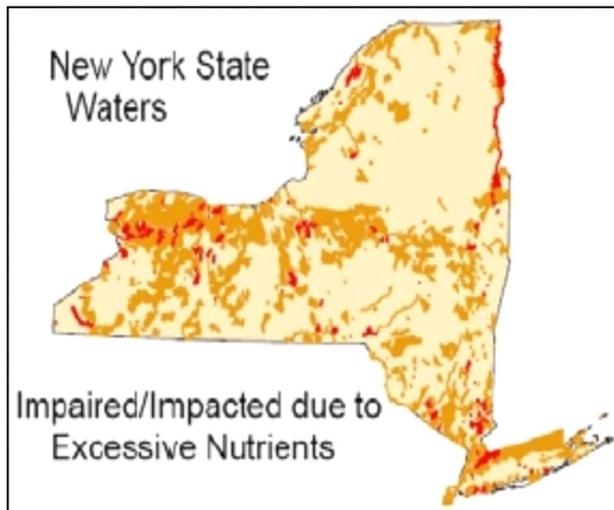


The Facts About Nutrient Pollution

The Significance of Phosphorus Pollution in NYS

Excessive nutrients and eutrophication are identified as a major source in 23% of all waterbodies assessed as impaired in New York State. In another 29% of impaired waters, nutrients and eutrophication are contributing sources (though not the most significant sources).

Additionally, for 54% of the waters with less severe impacts or threats, nutrients and eutrophication are noted as major contributing sources of impact, and an additional 9% of impaired waters show nutrients as a lesser contributing source in waters with minor impacts or threats.



Specific Waters

Impaired waters (shown in red) or impacted/threatened waters (shown in orange) due to nutrients are fairly widespread across New York State. This broad distribution is a result of the multiple sources of nutrients to the waters of the state. Municipal wastewater discharges and urban/storm runoff are the primary sources in more developed urban areas. Agricultural runoff, inadequate onsite septic systems, and other nonpoint sources contribute nutrients to waters in less populated rural areas. Nitrogen is the nutrient of greatest concern in and around Long Island and New York City marine waters, while phosphorus is typically the cause of enrichment in fresh waters of the state.

Limiting Phosphorus Pollution Will:

- **Safeguard drinking water supplies and protect water resources and aquatic life**
- **Protect economic prosperity, jobs and property values**
- **Maintain recreational uses of water for fishing, swimming, and boating**

CNY Stormwater Coalition

The CNY Stormwater Coalition was formalized in 2011 in order to establish a regional approach to stormwater management and water resource protection. The Coalition is made up of 28 local governments and the NYS Fairgrounds that operate Municipal Separate Storm Sewer Systems (MS4s). Through the Coalition, members are working together to meet regulatory requirements while improving water quality.

CNY STORMWATER COALITION MEMBERS

Camillus Town	Baldwinsville Village
Cicero Town	Camillus Village
Clay Town	Central Square Village
DeWitt Town	East Syracuse Village
Geddes Town	Fayetteville Village
Hastings Town	Liverpool Village
LaFayette Town	Manlius Village
Lysander Town	Marcellus Village
Manlius Town	Minoa Village
Marcellus Town	North Syracuse Village
Onondaga Town	Phoenix Village
Pompey Town	Solvay Village
Salina Town	Syracuse City
Van Buren Town	Onondaga County
	NYS Fairgrounds

You're invited to attend the next CNY Stormwater Coalition Meeting

The CNY Stormwater Coalition meets quarterly throughout the year. Meetings are held on Tuesday afternoons from 1:00 to 2:00 at various municipal buildings around the region. All meetings are open to the public. Your attendance and participation are always encouraged. The next meeting is scheduled for November 10, 2015. Location to be announced at 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.



Central New York Regional Planning & Development Board

SAVE THE DATE for the 2015 CLEAN WATER FAIR

SEPTEMBER 12, 2015 • 9AM – 2PM

DEPARTMENT OF WATER ENVIRONMENT PROTECTION
650 HIAWATHA BLVD. W., SYRACUSE NY

- ▲ Green Project Tours
- ▲ Facility Tours
- ▲ Rain Barrel Classes

Learn, explore, discover!

- ▲ Kids' Activities
- ▲ Equipment demonstrations
- ▲ Viewing Lake Wildlife





Joanne M. Mahoney
County Executive

Save the Rain
www.savetherain.us

Please be sure to stop by the CNY Stormwater Coalition's booth while visiting the WEP Clean Water Fair. Hope to See You

MARK YOUR CALANDER FOR FUN!

The 2015 Westcott Cultural Fair will be held from noon to 6:30 PM on Sunday, September 12.



The Westcott Cultural Fair is an annual one-day celebration of the diversity and uniqueness of the Westcott neighborhood through its culture, visual and performing arts, food, service organizations and activities geared toward families and university students returning to the neighborhood. Come out for a day filled with great sights, sounds, tastes, and a chance to learn more about stormwater management and water quality protection!

As the sun sets on another beautiful CNY Summer, remember to **KEEP IT CLEAN, NOT GREEN!**



Oneida Lake at sunset.