Business Name

Gardens and Gutters

A Central New Yorker's Guide to Managing Stormwater Runoff

Volume 8 Issue 1 Spring 2020

Gardening 2020, A Different Kind of Solitude

Inside this issue:

Looking back, the winter of 2019-20 was pretty tame. It was much warmer than last winter and it seemed like we were able to enjoy a fair amount of sunshine considering Lake Ontario's propensity to send clouds our way for months at a time. Still, even when the seasonal snow totals are relatively low by Central New York standards, spring can be slow to set in around here. Late April brought accumulating snow to the hills of Pompey and other areas across Central New York on several occasions. As we round the corner into May, the long-term forecast is finally snow free and it's time to get back outside into the garden.

This year, more than any other, the garden can be a refreshing diversion and source of sanity as we all deal with the limitations of social distancing. In fact, the current directive to stay at home is a great opportunity to take even better care of our lawns, gardens and landscapes. Gardening is safe and unlike sitting inside, will bear fruit.

Early days in the garden typically involve a fair amount of clean up and planning work. It's a good time to think ahead about making changes that will increase the beauty and function of your garden and protect local water resources at the same time.

One of the greatest threats to water quality comes from increased land development. Land development leads to less stormwater soaking into the ground where pollutants can be naturally filtered. Stormwater runoff from "undeveloped land" such as bare and compacted soils in our laws and gardens can also threaten water quality. This runoff can lead to erosion and can transport pollutants such as fertilizer, pesticides, soil particles and other organic material to our lakes and streams. Every parcel of land has the potential to impact water quality.

You can improve your property's impact on water quality by reducing the amount of pollutants and stormwater generated from your lot. Consider implementing one or more stormwater best management practices in your garden and landscape plans and select native trees, plants and flowers that will thrive in your yard. Not only do native species reduce long term irrigation and the need for supplemental fertilizers and pesticides, they keep soil healthy and attract native pollinators.

This edition of *Gardens and Gutters* will help you get off on the right foot with information about controlling common backyard invasive species and replacing them with native plants. There's also helpful information to help you assess which stormwater best management practices are most suited for your site, and garden or landscape objectives. Finally, because April showers sometimes drag into May, check out the events page for some events that you can enjoy while waiting out the storm or maintaining social distancing requirements.

Controlling Invasives in Your Backyard

Robert Smith

Curtesy of the St. Lawrence Eastern Lake Ontario Invasive Species Partnership for Regional Invasive Species Management (SLELO)

Now that spring is here and the area is once again becoming green, invasive species will be emerging and trying to take control of your property. Managing these species early is key to a successful season of management. One reason for getting an early start is to remove invasive plants before they produce seed and disperse to new areas of your yard or your neighbors. In addition, soil is generally more moist and soft which allows for easier removal and less roots remaining in the soil.

Since there are far too many invasive species to cover in detail in this article, I will focus on a few that commonly appear in backyards.

Garlic mustard (alliaria petiolata) has established itself within forested areas and forest edges. It is a biennial with seedpods forming in May of the second year of their life cycle. Hand removal is an effective method for management if conducted before formation of the seeds. At least the top half of the roots should be removed to prevent formation of a new stem. Repeat hand pulls will be necessary for several years to exhaust the seed bank.

Spotted knapweed (Centaurea stoebe) is a short lived perennial that spreads rapidly in disturbed and man-made open areas like agricultural fields, overgrazed pastures, and backyards. Like garlic mustard, spotted knapweed can be hand pulled prior to seeding with care to remove as much root as possible. Mowing can also be used to prevent seeding.

Leafy spurge (Euphorbia virgata) is a long lived perennial that invades pastures, roadsides, abandoned fields, and disturbed areas like backyards. It can regenerate from small pieces of root and form new individuals from root sprouts. Management is difficult, but most effective if treating small patches or combining treatment methods. Repeated cutting or mowing may limit seed production. Equipment should be cleaned to reduce spreading the plant to other areas.

NOTE: Both leafy spurge and spotted knapweed sap may cause skin irritation. Exercise caution when handling. Protective gear should be worn.

Native Alternatives to Invasive Landscape Plants

Sue Gwise-Cornell Cooperative Extension Jefferson County
Curtesy of the St. Lawrence Eastern Lake Ontario Invasive Species Partnership for Regional Invasive Species Management (SLELO)

Most of us think of invasive plants as those that invade natural areas. You may be surprised to know that your landscape may be harboring invasive species that were intentionally planted.

Many invasive plants are still sold by nurseries and garden centers. Some common invasive landscape species are now regulated or prohibited by the Department of Environmental Conservation. Regulated plants can be possessed, but not knowingly released into natural areas while prohibited plants can not be sold, bought or possessed in New York State. View a full list of regulated and prohibited plants in NYS.

If you do decide to remove any invasives from your landscape, below is a list of native replacements. If you are starting a new landscape project, do not plant the invasive species listed below. Try to favor native plants as much as possible to take advantage of the following benefits:

- Native plants support native wildlife. 90% of all songbirds raise their young on caterpillars that feed on native plants.
- Native plants are lower maintenance as they are adapted to our climate conditions and have fewer diseases and insect isuues.
- A healthy population of native plants can deter invasion from invasives to an area.

For a larger view of this list visit the SLELO PRISM website.

Invasive Plants	Native Plant Alternatives
Asian Honeysuckles (*Lonicera spp.*) **Prohibited**	Gray, Red or Silky Dogwood (*Cornus spp.)*
Autumn and Russian Olive (*Elaeagnus umbellata* and *angustifolia*) **Prohibited**	Wild Plum (*Prunus Americana*), Staghorn Sumac (*Rhus typhina*). American Hazelnut (*Corylus Americana*)
Burning Bush (*Euonymus alatus*) **Regulated**	Red chokeberry, (*Aronia arbutifolia*), Black Chokeberry (*Aronia melanocarpa*), High Blueberry (*Vaccninium corymbosum*), Fragrant Sumac (*Rhus aromatica*), Virginia Sweetspire (*itea virginica*), Dogwood species listed above
Callery (Bradford) Pear *(Pyrus calleryana)* **Not Regulated/Prohibited**	Common & Allegheny Serviceberry (*Amelanchier spp.*), Cockspur & Green Hawthorne (*Crataegus spp.*), Sweet crabapple (*Malus coronaria)*
Japanese Barberry (*Berberis thunbergii*) **Prohibited**	Virginia Rose (*Rosa virginiana*), Bayberry (*Myrica pensylvanica*), Ninebark (*Physocarpus opulifolius*), Silky Dogwood (*Cornus amomum*), Red & Black Chokeberry (*Aronia spp.*)
Multiflora Rose (*Rosa multiflora*) **Prohibited**	Spicebush (*Lindera benzoin*), Shrubby cinquefoil (*Potentilla fruticose*)
Norway Maple (*Acer platanoides*) **Regulated**	Red & Sugar Maple (*Acer spp.*), American Linden (*Tilia americana*), Red Oak (*Quercus rubra*), Tuliptree (*Liriodendron tulipifera*)
Oriental Bittersweet (*Celastrus orbiculatus*) **Prohibited**	American bittersweet (*Wisteria frutescens*), Virginia Creeper (*Parthenocissus quinquefolia)*

Considerations for Choosing Stormwater Best Management Practices for the Home and Garden

Spring and summer rains improve garden health and vigor, but only when the rain can soak into the soil. When stormwater falls on hard, compacted soils or on paved surfaces and roofs, the benefit of those rains is lost in the form of stormwater runoff. Stormwater runoff can wash away soil and the nutrients that plants need to thrive. Stormwater runoff is easily contaminated by pollutants on the land's surface posing a threat to the health of our surface waters that it washes into. Runoff also creates flooding issues during heavy rain events.

As a gardener, landscaper, or do-it-yourselfer, you can help avoid the problems associated with stormwater runoff by taking steps to capture and utilize stormwater on your property. Paying attention to garden placement, soil health and plant choices will pay dividends including reduced watering needs, fewer weeds to pull and improved plant growth,

The following guide outlines considerations to help you decide which practices are right for your site.

RAIN GARDEN

A depressed garden that uses mulch, soil and deep rooted native plants to capture, absorb and infiltrate stormwater.

BENEFITS: Manages stormwater and filters pollutants; wildlife habitat; little maintenance; adds beauty	**NEGATIVES:** Plants can take 2-3 years to establish; more maintenance required in first few years	**COST:** $$
MAINTENANCE: Low once plants are established; weeding and watering in first two years; some thinning in later years	**AESTHETIC APPEAL:** Ranges from medium to high; can customize based on plant selection  http://nemo.uconn.edu/raingardens/	**IMPLEMENTATION CONSIDERATIONS:** Construct downslope of runoff to be captured; plant in spring or fall; locate at least 10 feet from building foundations

RIPARIAN BUFFER

Planting native trees and shrubs along streams and wetlands to restore the streamside area to forested conditions. Riparian buffers filter runoff and have numerous water quality benefits.

BENEFITS: Increases infiltration and groundwater recharge; improves water quality; controls erosion and sedimentation; provides wildlife habitat	**NEGATIVES:** Not as effective on steep slopes; more difficult to implement than some other practices	**COST:** $
MAINTENANCE: Low once native plants are established; weeding and watering in first two years; some plant thinning in later years; regularly remove debris and excessive sediment accumulation	**AESTHETIC APPEAL:** Ranges from medium to high; higher aesthetic appeal than conventional stormwater conveyances.	**IMPLEMENTATION CONSIDERATION:** Plant in spring or fall; locate at least 10 feet from building foundations

TREE PLANTING

Planting native trees and shrubs on a portion of your property to forested conditions.

BENEFITS: Increases infiltration and evapotranspiration of stormwater; filters pollutants; requires little maintenance; provides wildlife habitat; large canopy of native trees maximizes benefits	**NEGATIVES:** Takes many years before trees grow to provide maximum benefit; regular maintenance is required where invasive plant species exist; must guard against deer and vole damage	**COST:** $/$$
MAINTENANCE: Maintain tree tube/stakes or cages; spray and mow between trees at least twice a year during first 4 to 5 years	**AESTHETIC APPEAL:** High aesthetic appeal, as trees add interest, structure, color, and wildlife to property  http://www.dec.ny.gov/lands/5307.html	**IMPLEMENTATION CONSIDERATIONS:** Plant in spring or fall; watering may be necessary after planting during dry weather (25 gallons/week)

NATIVE MEADOW

An area planted with native grasses and wildflowers and maintained as a natural area. "No mow" areas can also develop into meadow areas.

BENEFITS: Increases infiltration and evapotranspiration of stormwater ; filters pollutants; requires little maintenance; provides wildlife habitat	**NEGATIVES:** Site preparation (including turf grass removal) is required before planting; meadows may conflict with local weed ordinances	**COST:** $ Native seed mixes vary depending on type of species and amount of variety desired
MAINTENANCE: Mow twice a year for first two years; mow annually after that; control invasive species	**AESTHETIC APPEAL:** High aesthetic appeal, as tall grasses and wildflowers add interest, structure, color and wildlife to property  https://bqekeeper.files.wordpress.com/2014/08/loretto.jpg	**IMPLEMENTATION CONSIDERATION:** Plant in spring; monitor and control invasive species

PERVIOUS PAVERS

Impervious building materials, such as stone, concrete or brick laid with space in between to allow for pervious areas (gravel, sand or vegetation) in driveways, parking areas or walkways.

BENEFITS:
Increases infiltration and groundwater recharge; reduces volume and rate of runoff

NEGATIVES:
More labor intensive to install than other practices; nonconventional option to pavement

COST: $$
Can save by installing permeable pavers; may need to excavate and install sub base, increasing costs

MAINTENANCE:
Moderate to high maintenance; grass between pavers may have to be mowed; inspect for signs of clogging; pressure wash and replace pea stone as needed

AESTHETIC APPEAL:
Ranges from low to medium; artistic designs with layout can increase aesthetic appeal

http://hillsidegardencenter.com/

IMPLEMENTATION CONSIDERATIONS:
Need to install permeable sub-base ; locate at least 10 feet from building foundations

RAIN BARREL/CISERN

A barrel that captures rainwater from a roof and stores it for later use, such as watering non-edible plants or flower gardens. A cistern is a larger container that does the same thing.

BENEFITS:
Conserves water; captures and reuses stormwater

NEGATIVES:
Minimal volume captured; poor construction or maintenance can result in mosquitoes

COST: $
Very minimal cost; can save money because of reduced potable water usage

MAINTENANCE:
Clean screen/filter regularly; clean gutters twice annually; monitor during severe storms to avoid overflow; empty before winter months

AESTHETIC APPEAL:
Ranges from low to medium depending on type of barrel used

http://www.h2ohero.org/

IMPLEMENTATION CONSIDERATIONS:
Place on level surface; full rain barrel weighs approximately 400 lbs.

Summary Chart for Selecting Stormwater Practices for Your Property

	Rain Garden	Riparian Buffer	Tree Planting	Native Meadow	Pervious Pavers	Rain Barrel/Cistern
Space required	Minimum size: 50 – 200 ft² surface area 5 – 10 ft wide 10 – 20 ft long 3-8 inches deep	The wider the better for water quality benefits. Lot size and configuration will impact buffer width	Consider space needed for canopy spread	Not a factor	As needed to accommodate walkway, patio, or driveway	Not a factor
Slopes	Not usually a limitation, but a design considera-tion. Locate down slope of building foundations	Not usually a limitation, but a design consideration	Not usually a limitation, but a design consideration	5% or less	Not a factor	Not a factor
Depth to water table	1 – 4 ft clearance	Not a factor if correct species are planted			1 – 4 ft clearance	Not a factor
Depth to bedrock	1 – 4 ft clearance	1 – 4 ft clearance	1 – 4 ft clearance	Not a factor	1 – 4 ft clearance	Not a factor
Building foundations	Minimum 10 ft down slope from building foundations				Not a factor	Not a factor
Maintenance All practices should be inspected seasonally and after major storm events.	Low: Weeding and watering in first 2 years. Some thinning in later years.	Low to Moderate: Maintain tree tubes or cages. Mow between trees for first 4-5 years. Control invasive plants. Water as needed.	Low to Moderate: Maintain tree tubes or cages. Mow between trees for first 4-5 years. Control invasive plants. Water as needed.	Low to Moderate: Mow twice annually for first two years. Control invasive plants.	Moderate to High: Grass between pavers may have to be mowed. Inspect for signs of clogging. Pressure wash and replace pea stone as needed.	Low: Clean screen/ filter regularly. Clean gutters twice annually. Monitor during severe storms for overflow. Empty before winter months.

Before you dig, please remember to contact your utility company to learn where your underground utilities (such as electrical, sanitary sewer and water) are located.

This chart was adapted from the New Hampshire Homeowner's Guide to Stormwater Management Do-It-Yourself Stormwater Solutions. NH Department of Environmental Services (March 2011, revised February 2012).

Trees: Workhorses of the Natural and Planned Landscape

Thinking about planting a tree this year? Do it! Besides yourself, few things will work as hard in your garden or landscape than a tree.

Trees help reduce stormwater runoff and improve water quality by capturing large amounts of rain through their root systems and canopies. A mature street tree can absorb over 1,000 gallons of water a year.

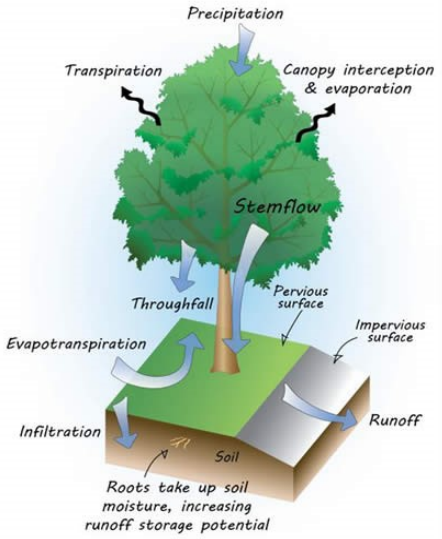
Trees help reduce soil erosion. Soil can be lost to strong winds and runoff, but tree roots bind the soil and prevent soil loss. Tree canopies intercept and reduce the velocity of raindrops that do hit the soil.

Trees help mitigate flooding. Trees evapotranspirate large amounts of water from the soil. Mineral soils below trees absorb and retain water which is released over time.

Trees cool down buildings – especially when planted to the east or west – as their shade prevents solar radiation from penetrating windows and heating up external walls. Studies suggest that shade from trees can reduce the air conditioning costs of detached houses by 20% to 30%.

Before you conduct any tree planting, learn which invasive species are anticipated and which ones are already in your area. The NY Invasive Species Information Clearinghouse is your gateway to science-based information, innovative tools, news and events for coping with biological invaders in New York. NYIS.INFO links scientists, local, state and federal resource managers, policy setters, educators, and grassroots efforts to help you become part of the battle against invasive species in New York.

The St. Lawrence and Eastern Lake Ontario Partnership for Regional Invasive Species Management's *Urban Forest Sustainability Guide* is a great resource for all things tree related. This guide is designed to help communities sustain their urban forests by encouraging increased tree species diversity, planting climate adaptable trees, implementing proper pest management, planting the right trees in the right places, and selecting native rather than non-native tree species. Additional tools can be found at the SLELOPRISM website and the Finger Lakes Partnership for Regional Invasive Species Management website.



Graphic credit: U.S. Environmental Protection Agency

There's Fertilizer, and Then There's ...

Remember to keep your yard and garden clean and free from pet waste. While there are no laws requiring you to clean up pet waste on your own property, there are good reasons to be careful. Some diseases can be transmitted from pet waste to humans through soil contact. Children who play outside and adults that work in their yards and gardens are most at risk for infection, so cleaning up after your pet is especially important. Washing your hands with anti-bacterial soap and water after working or playing in the soil is your best protection from disease.

Picking up after your pet also helps to keep local lakes and streams clean (and your neighbors happy). When dog waste is left on the ground, rain or melting snow transports it to lakes and streams where it can negatively impact water quality and cause human health problems. Dog waste also contains nitrogen and phosphorus that promote the growth of unwanted algae and rooted aquatic plants in lakes and streams. In fact, dog waste has a higher phosphorus concentration than cow and swine manure, and is considered to be a major contributor of pollution in urban watersheds. Scooping your dog's waste isn't just a curtesy for those walking behind you, it also helps keep our water resources safe and our gardens smelling nice.

NYS Law Restricts the Use of Lawn Fertilizers Containing Phosphorus

Although phosphorus is critical to healthy plant growth, natural phosphorus levels in most NYS soils are high enough to support vigorous plant and grass growth without supplements. Applying phosphorus fertilizer results in phosphorus levels that are higher than what plants can take up. The excess phosphorus then runs off the land following rain or irrigation. This nutrient enriched runoff leads to water quality issues and contributes to the growth of Hazardous Algal Blooms (HABs) that can be toxic to humans and animals, including pets.

In NYS, it is illegal to use phosphorus fertilizer on lawns that don't need it. The NYS Dishwasher Detergent and Nutrient Runoff Law is designed to reduce the amount of phosphorus entering the state's waters and improve water quality in lakes and streams.

The law sets restrictions on the use of phosphorus fertilizer on lawns and non-agricultural turf. Only lawn fertilizer with less than 0.67 percent by weight phosphate content is permitted. The law applies to homeowners applying fertilizer themselves, landscapers and lawn care professionals, pesticide applicators, retailers, distributors and manufacturers of lawn fertilizers. It also applies to fertilizer/pesticide combination products when these products contain over 0.67% phosphorus, and to organic phosphorus fertilizer such as bone meal. The law does not apply to products with 0.67 or lower concentrations of phosphorus, agricultural fertilizer, fertilizer for trees, shrubs, gardens, or compost. Additionally:

- Application of any fertilizer containing nitrogen, phosphorus or potassium on lawns or non-agricultural turf is prohibited between December 1 and April 1.
- Application of any fertilizer on lawns or non-agricultural turf within 20 feet of a water body or on paved surfaces is restricted.

CNY Stormwater Coalition

The CNY Stormwater Coalition was formalized in 2011 for the purpose of establishing a regional approach for stormwater management and water resource protection. Each of the Coalition's 30 members operates a Municipal Separate Storm Sewer Systems (MS4). Through the Coalition, members are working together to meet regulatory requirements while improving water quality and saving money.

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
Sullivan Town	Onondaga County
Van Buren Town	NYS Fairgrounds

DID YOU KNOW...

It's illegal to dispose of anything but stormwater in a storm sewer because the discharged waste flows directly to local waterways without any treatment. A **Stormwater Pollution Hotline** has been established for reporting illicit discharges to storm sewers in Onondaga County. If you suspect someone has discharged chemicals, construction material, paint, motor oil, or even lawn waste into a storm sewer, contact the **Onondaga County Stormwater Pollution Hotline at 315-435-3157.** The hotline is staffed 24 hours a day, seven days a week by the Onondaga County Office of Water Environment Protection.

The CNY Stormwater Coalition is staffed by the CNY Regional Planning & Development Board. For more information, visit the CNY Stormwater Website at www.cnyrpdb.org/

Central New York Regional Planning & Development Board

HELP WANTED

The CNY Stormwater Coalition believes that everyone has a role in keeping our surface waters clean and healthy. As an organization, we are committed to providing information that supports water protection through informed personal choices. To be effective, we need to hear from you. **Please take a few minutes to complete our online survey.** Your responses will help us deliver useful and interesting information in a format that meets your lifestyle and addresses your interests. The survey takes approximately 5 minutes to complete but will help us shape our outreach program for years to come. Thank you in advance for participating in our survey. Click HERE to participate in the survey.

Staying Home? No need to stop learning. Check out these FREE Online Presentations brought to you by Cornell Cooperative Extension of Onondaga County

Master Gardener Presentation: Container Gardening - Online
Monday, May 11, 2020, 4:00 PM - 5:00 PM –FREE
Learn the advantages and disadvantages of growing in containers, along with what to grow.
Registration is required for this event. Please visit bit.ly/ContainerGardeningMay11 to sign-up! Participants will be sent a Zoom meeting link.

Master Gardener Presentation: Composting - Online
Monday, May 18, 2020, 4:00 PM - 5:00 PM—FREE
We'll share information and easy ideas for composting in your home garden.
Please visit bit.ly/CompostingMay18 to sign-up! Participants will be sent a Zoom meeting link.

AND THIS TIMELY WEBINAR FROM THE
Finger Lakes Partnership for Regional Invasive Species Management
A Giant Problem—The Battle Against Giant Hogweed—Webinar
Wednesday, May 13, 2020, 12:00—1:00 P.M.—FREE
Naja Kraus, NYS DEC Region 3
Patty Wakefield-Brown, Finger Lakes Institute at Hobart & William Smith Colleges

Join the webinar here: https://hws.zoom.us/j/707067900