CNY STORMWATER COALITION

Gardens and Gutters

A Central New Yorker's Guide to Managing Stormwater Runoff

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Protecting Lawns and Gardens From Winter Road Salt

Most Central New York gardeners are familiar with the harsh effects that road salt and vehicle exhaust can have on lawns, trees, and gardens. Refined rock salt contains approximately 98.5% sodium chloride and is commonly used on icy roads. It serves a valuable function by keeping roads safe during the winter months. It can, however, be harmful to plants and water resources.

After a rainfall event or spring snowmelt, stormwater runoff containing road salt can pollute nearby lakes and streams. The salt carried in the runoff can accumulate in the soil where it affects how roots absorb nutrients. Sodium ions in road salt can be absorbed by plant roots, replacing essential minerals such as potassium, calcium and magnesium. The salt restricts moisture intake from plant roots and dehydrates the leaves, causing them to turn brown and die.

Excess salt in the soil can also limit healthy root formation and plant growth later in the spring. Road salt can change the soil structure, permeability and aeration, and impacts plant growth by reducing the rate of chlorophyll production and photosynthesis. Perennials impacted by salt runoff do not leaf out as strongly or develop buds as other healthy plants would.

Several options are available to reverse salt damage. Pelletized gypsum, for example, can be used to treat salt

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Protecting Lawns and Gardens From Winter Road Salt, *continued*

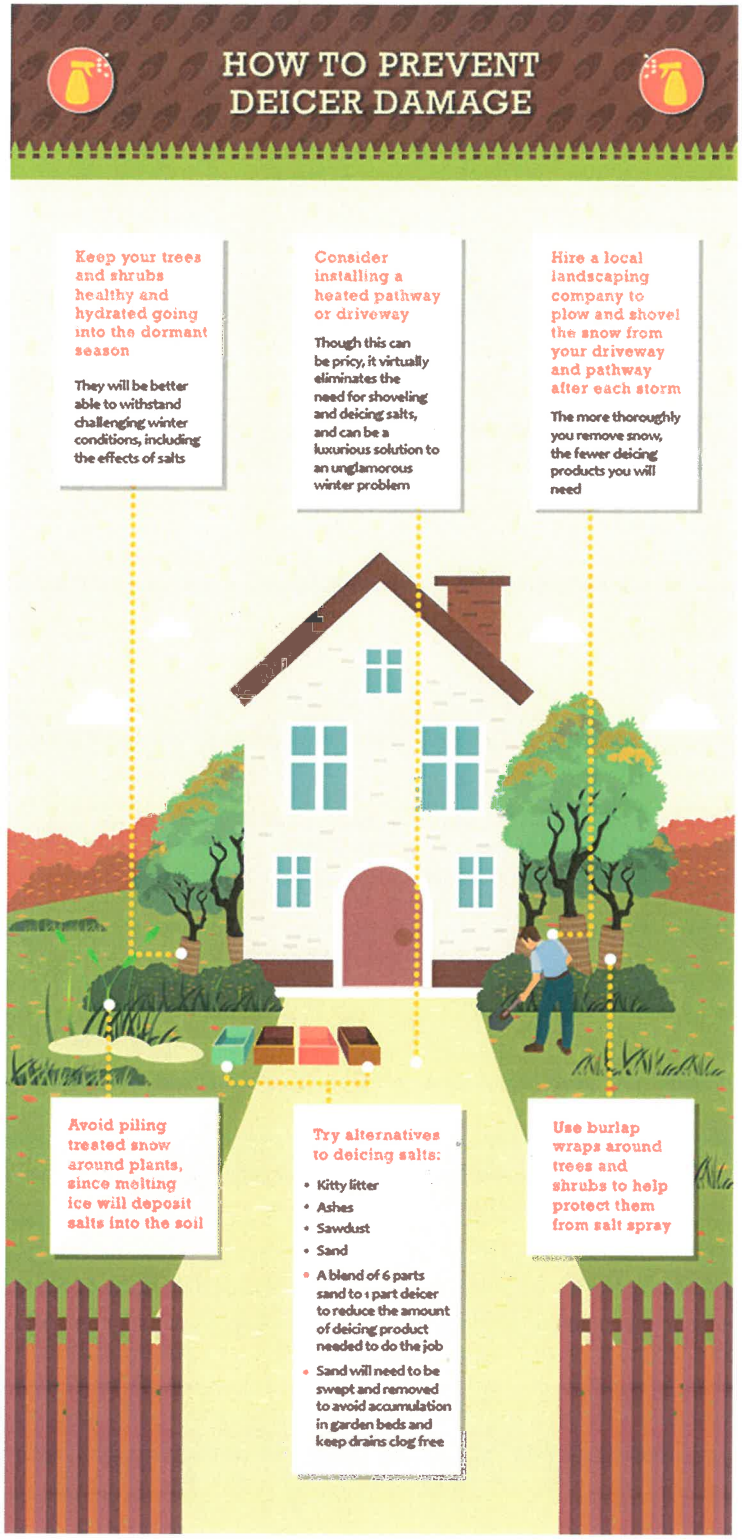
damage on lawns. The gypsum (or calcium sulfate) replaces the salt with calcium and sulfur and provides an inexpensive way to heal grass and encourage new growth. It is also useful in helping the soil retain water.

Rinsing plants with water for several days in a row in the spring will also help to decrease plant damage by washing the salt from the vegetation and flushing it from the soil. Rake out as much of the dead grass as possible and use a steel rake to loosen the soil. Then treat the area with gypsum, apply a thin layer of compost, spread some grass seed, and water the area for a fresh new start.

To help avoid the problem of salt damage before it occurs, avoid shoveling snow from roadways onto lawns or provide physical barriers such as plastic, burlap or snow fencing to minimize the effects of salt spray. Consider the use of alternative deicing products such as kitty litter or sawdust to melt ice along driveways and sidewalks. These products won't damage your plants in the spring but be sure to sweep any remaining materials once the ice has melted so that it doesn't wash into nearby water-bodies.

Additional approaches should be considered when new driveways, sidewalks, lawns and gardens are being installed such as grading walkways and driveways so that they drain away from horticultural areas. Also consider the use of resistant or salt-tolerant plant varieties in your yard to avoid salt damage. According to Genevieve Schmidt, a well-known landscape designer, Norway maple, paper birch, white ash, European larch, Mugo pine, blue spruce, and common lilac are all relatively salt-tolerant.

Adopted from http://homeguides.sfgate.com/negative-effects-road-salt-lawn-84792.html and S. Patterson, www.gardeningknowhow.com



Source: https://www.fix.com/blog/recovering-landscapes-from-salt-damage-after-winter/

Making a Challenging Issue a Bit Simpler to Understand

Regulated MS4s, SUA, CSO, bioretention … filtering through stormwater terminology can be quite a challenge but when all is said and done, it boils down to a simple message: we all need to work together to protect local water resources.

It's not difficult to understand that preventing water pollution is easier and less expensive than dealing with the impacts after it occurs. What's at stake when our waters become polluted? Among other things, our health, aquatic habitat, recreation opportunities, wildlife biodiversity, and many aesthetic benefits associated with clean water resources.

Many pollutants can be carried in stormwater runoff. Here in Central New York, phosphorus from lawn fertilizers and sediment from lawns, gardens, construction and home improvement projects are major contributors to water quality impairments. Others include pathogens and bacteria from pet and animal waste, and toxic materials such as gasoline, oil, solvents and other common household and automotive chemicals. When rain and snowmelt washes these pollutants into local lakes, rivers, streams and wetlands, the impacts can cause increased weed growth and algal blooms, some of which can be harmful to aquatic life and human health. Other less visible impacts can cause the loss of aquatic habitat and degradation of drinking water quality. With the increasing occurrence of strong storms, runoff events are becoming more frequent. As a result, associated impacts including streambank erosion, flooding, and damage to municipal infrastructure and personal property are also on the rise.

Because stormwater is a part of the natural system, it's easy to think of it as harmless. However, stormwater runoff is the number one contributor to water quality problems in the nation and is responsible for causing significant damage to public infrastructure. To address this reality, the Phase II Stormwater Program, a federally mandated regulatory program under the Clean Water Act, was implemented across NYS in 2003. The program addresses stormwater pollution from construction activities and municipal storm sewer systems (MS4s). Typical components of MS4s include open and closed pipes and drainage ditches, curbs and gutters, and catch basins used to collect and convey stormwater away from our roads and into nearby surface waters, such as lakes and streams.

Many municipalities in the Syracuse area operate an MS4 system and are regulated under the Stormwater Phase II program. Regulated MS4 communities are required to manage the volume and quality of stormwater that flows through its MS4. In the past few years, the area subject to these regulations

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REMINDER: THE CUTOFF DATE FOR FERTILIZING LAWNS IS DECEMBER 1

Excess phosphorus in freshwater lakes, ponds, streams and wetlands can cause excessive algae growth with serious impacts to the aquatic environment and public health.

In order to reduce phosphorus runoff and project surface water quality, New York State has a law banning the use of fertilizer between December 1 and April 1.

To learn about other requirements of the Dishwasher Detergent and Nutrient Runoff Law, visit the NYS DEC's website. The law does not apply to agriculture fertilizer or fertilizer for gardens.

Making a Challenging Issue a Bit Simpler to Understand, *continued*

has expanded as a result of population growth as documented in the 2010 Census of Population.

To help curb the cost of complying with stormwater regulations, MS4 communities in Central New York have become members of the CNY Stormwater Coalition. The Coalition provides a mechanism for reducing duplicative compliance efforts and sharing common program costs. The Coalition is administered by the CNY Regional Planning and Development Board on behalf of its 29 members.

Municipal officials have also implemented pollution prevention practices in their day-to-day operations. Local law requires developers to do the same on all new construction projects.

However, to be truly effective, stormwater management and water resource protection needs to be a community-wide effort that includes the participation of homeowners, local community groups, and the general public. Simple actions such as picking up after your dog, participating in stream clean-up events, or installing green infrastructure practices (rain gardens, tree plantings, vegetated buffers, etc.) can make a big difference in local water quality. Community associations, school groups and religious organizations are encouraged to distribute stormwater information when conducting local events that improve water quality and to report these events to their municipal representatives. If you are organizing an event, the CNY Regional Planning and Development Board can provide educational materials and tracking tools that can help you help your community.

Talk with your municipal representatives to learn more about stormwater management, or visit the CNY Stormwater Coalition website at www.cnyrpdb.org/stormwater for more information.

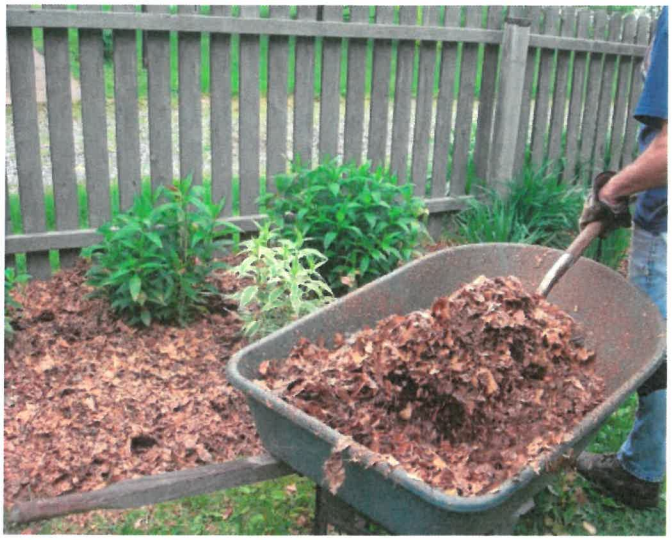


Photo source: http://www.motherearthnews.com

It's Not Too Late To Mulch

Many Central New Yorkers use mulch in the summer to control weeds and to make gardens and trees look nice. But don't forget—mulch also helps to keep the soil warm and moist during the winter months. Most mulch is made of decomposing organic matter which creates heat. Mulch applied to the base of perennials can protect roots and bulbs from ice and cold temperatures. It can also help to retain moisture, as bare, unprotected soil loses water during the cold winter months. In addition to plant protection, a thick layer of mulch can provide shelter for wildlife that may be looking for a warm place to spend the winter.

Using a Climate Zone Map for Gardening Success

Climate zones (also referred to as gardening zones, growing zones and plant zones) refer to geographic regions that can support specific plants and trees. The zones define a minimum range of temperatures that plants or trees need to survive. Climate zone maps are used as tools to show where various perennial plants can adapt and are the standard by which gardeners and growers can determine which plants are most likely to thrive at a given location.

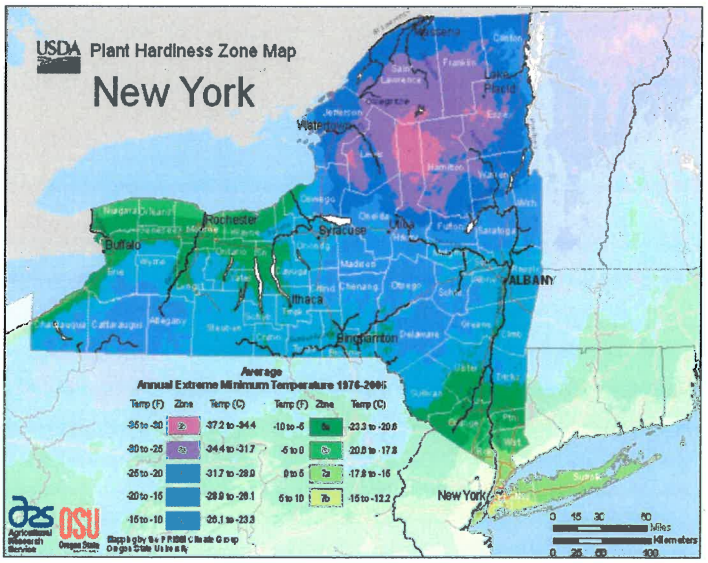
In order for a shrub, perennial, or tree to grow well, the plant must tolerate year-round conditions such as the lowest and highest temperatures and the amount and distribution of rainfall. If you see a reference to a climate or hardiness zone in a catalog or plant description, chances are it refers to a map developed by the USDA. The 1990 USDA Hardiness Zone Map is the one most gardeners in the eastern United States have relied on and the one that many garden magazines, catalogs, books, and nurseries have used. The map divides North America into eleven separate zones; each zone is 10°F warmer or colder in an average winter than the adjacent zone. Gardeners around the country can learn about their climate zone by accessing the USDA website and entering their zip code.

The most recent version of the USDA zone map was jointly developed by USDA's Agricultural Research Service (ARS) and Oregon State University's (OSU) PRISM Climate Group, and released in January of 2012. Compared to the 1990 version, zone boundaries in the 2012 edition of the map have shifted in many areas. The new map is generally one 5°F half-zone warmer than the previous map throughout much of the United States.

According to the USDA, differences between the two maps are not technically a confirmation of a trend toward global warming. Instead, it is a more accurate display of growing conditions throughout the country. The new map was compiled using more advanced computers which enable scientists to better record accurate weather data. Additional changes in the zones are a result of more sophisticated methods for mapping zones between weather stations. These include algorithms that consider such factors as changes in elevation, proximity to large waterbodies, and position on the terrain (such as valley bottoms vs ridge tops). Also, the new map uses temperature data from many more stations than did the 1990 map.

Differences between the two maps are also a result of using temperature data from a longer and more recent time period. The new map uses data measured at weather stations during the 30-year period from 1976 to 2005. In contrast, the 1990 map was based on temperature data from only a 13-year period of 1974 to 1986. These advances greatly improved the accuracy and detail of the map. In some cases, they resulted in changes to cooler, rather than warmer, zones.

Adapted from The National Gardening Association Learning Library, http://garden.org/nga/zipzone/



Protecting Perennials from the Effects of Winter

Severe winter weather in Central New York can pose a threat to sensitive as well as hardy perennials. The first night of bitter cold temperatures can damage the cells of plants that haven't had time to harden off. Later in the season, plants can be harmed by cold temperatures, harsh winds, or dry conditions.

Some perennials can survive the winter months if they are covered by a blanket of snow. In the absence of reliable snowfall, exposure to wind and brutally cold temperatures may kill marginally hardy plants. Perennials can also be damaged if they are planted in areas with poorly drained soils. In addition, the freeze-thaw cycles of early spring can cause plants to heave out of the ground. Plant age is another variable to consider. The tissues of some plants, particularly trees and shrubs, are more susceptible to cold temperatures during their first year or two after transplanting. Only when they've reached a certain level of maturity are they fully hardy.

Here are a few tips that will help your perennials survive winter months with variable weather patterns.

- Make sure the plants are sufficiently watered before the ground freezes.
- After the ground freezes, cover your plants with a thick layer of bark, shredded leaves or pine boughs. This will help to moderate temperature changes and offers protection from the winter wind and sun.
- For plants needing special protection, cover them with seasonal shelters such as plastic pots or wrap them with burlap or heavy duty paper bags. To protect newly planted conifers or broad-leaved evergreens from harsh conditions, provide a simple windbreak with coarse burlap. Take a length of material long enough to wrap around the plant a couple times, drape the fabric over one side of the plant, and then wrap it loosely around the plant, positioning the branches to avoid breakage. If the plant is taller than the width of the material, work the material up or down the plant with each successive layer. Once the plant is covered, use a loop of twine to hold the cover in place.
- For a sturdier enclosure, position a few tall tomato stakes into the ground around the plant, wrap a curtain of burlap around them, and then staple it into place. For full protection, make the burlap walls at least 6 inches taller than the plant.

Adapted from "Fine Gardening", http://www.finegardening.com/shelter-plants-winters-worst

Protecting Tree Damage From Winter Weather

Many Central New Yorkers have directly experienced winter damage to trees and other cherished perennials. The level of damage can vary due to differences in climate, plant species and location. Here are a few tips that may help.

Broken Branches: Ice, snow, hail, wind, and other winter weather extremes often cause branches to break, altering the tree's appearance and, possibly, its productivity. Broken branches shouldn't be removed right away. Unless a hazard exists, wait until the end of winter to prune broken twigs and branches back to within one quarter of an inch above a live bud or to the branch collar of the nearest live branch. Pruning to reshape the tree can stimulate new growth in the spring. Removing the most susceptible parts of a plant prior to the onset of winter weather can also help to avoid future breakage. Branches that appear partially dead or especially weak would qualify for early removal.

Frost Damage: Pruning or fertilizing in late summer or early fall may stimulate new growth, which is unable to acclimate (harden off) before sudden temperature drops or unexpected wind or ice storms develop. The new foliage then turns brown or black. When temperatures start to warm up and plants break dormancy, an unexpected frost or freeze can, again, kill new growth.

Damaged leaves and flowers may drop by themselves after the danger of severe weather has passed, or you can prune to remove badly damaged or broken branches to help stimulate new growth. Most plants will usually produce new leaves if branches and buds have not been injured too severely.

Avoid pruning or fertilizing in late summer or early fall. This will help prevent a sudden push of new, tender growth. If leaf signs suggest an application of fertilizer is in order, use only a slow-release or organic option. If you must prune at this time, do it sparingly or wait until the plant reaches full dormancy. In the spring, wait until the plant has broken dormancy and the threat of low temperatures has passed before starting any pruning projects.

Adapted from 'Fine Gardening' /www.finegardening.com/preventing-and-repairing-winter-damage

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 System (MS4). 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

The CNY Stormwater Coalition meets quarterly throughout the year. All meetings are open to the public. The next meeting will be held in February, 2017. Check the Coalition's website in January for details.

www.cnyrpdb.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.cnyrpdb.org/stormwater

Central New York Regional Planning & Development Board

2016 INTERN PROGRAM A MAJOR SUCCESS!

Many thanks to our ESF student interns, Emma Aversa, Stephanie Vasteno, Vincent Ryan, and Julianna DiBiase! You may have seen them mapping stormwater infrastructure in your neighborhood this summer or stopped by to say hello to them at one of many public events they attended this fall. Their hard work and dedication will be missed!

Learning the ropes under the hot June sun.

Stephanie talks stormwater at the Westcott Culture Fair in September.

Emma and Stephanie at the Syracuse Crunch home opener in October.

Until next year, Happy Holidays from Dave Tessier, founding Chair, and John Houser, Current Chair of the CNY Stormwater Coalition!

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