Cornell Cooperative Extension
Onondaga County

Road Salts in Our Watersheds

Best Management Practices for
*Homeowners, Commercial/ Private Property Owners, Private Contractors**

Read on to learn how to adopt a more *financially sustainable, ecological, healthier* and *equitable* approach to deicing surfaces and winter safety.

About 40% of salt use in some areas of NY are from private users. In addition to being used on public roads, salt is also used on ***parking lots and internal roads of commercial and industrial establishments, schools, churches, apartment complexes, camp roads, or private driveways and drives***.

Adding too much salt to an icy surface is an unnecessary cost and can increase damage to concrete, metal, drinking water, vegetation, fish and wildlife, as well as air and water quality -which can impact human health.

Private contractors, those who hire private contractors, and individuals who apply their own de-icing/ anti-icing products have an opportunity and responsibility to implement more sustainable practices that reduce the negative environmental, health, and financial impacts of over application or rock salt.

Human Health Threats

- Drinking water supply– wells and municipal supply. Direct threat to individuals with high blood sugar due to increased sodium. Indirect threat through increased nutrient and sediment loading to water bodies (HABs and turbidity)
- Air quality threat due to 'salt clouds'
- Threats to pets: paws and ingesting

Financial Costs/ Resource Sustainability

- Conservative applications save money on materials and damage long-term
- Over application of salt and chloride ions accelerate corrosion impacting infrastructure, concrete, parking structures, brake lines, car bumpers, and can even cause issues with transmission lines in our vehicles

Ecological Degradation/ Wildlife

- *Water quality*– Cl toxic to aquatic life and wildlife. NaCl disrupts density and dissolved oxygen distribution, impacting macroinvertebrate and fish populations
- *Vegetation threats*– Roadside and aquatic plants. Leaf burn. Increased risk of invasive species
- *Threats to wildlife*– consumption of toxic chemicals, loss of habitat, reproduction issues
- *Soil*– soil depletion, loss of structural stability, erosion, increased runoff, nutrient, sediment loading

Environmental Justice

- Drinking water supplies threatened
- Prioritization and Cost efficiency
- Externalized costs of infrastructure impacts

Content above and guide on page 2 of this publication were created based on research-based best practices, protocol, and programs published the following agencies and partners.

Cornell Local roads Program, NYS DEC, NH DES, The Cary Institute of Ecosystem Studies, NYSDOT, ADK Action, Soil and Water Conservation Districts. *Thank you.*

Rock Salt Application and Ice Control Trips for
*Homeowners, Commercial/ Private Property Owners, Private Contractors**

**recommended for the sites listed in bold on front of page.*

Tips to prevent over-applying deicer

(and save you money while reducing threats to human health and ecological systems)

- Do your research and decide application rate to match deicer:
  - -**Rock salt:** use about *1 handful* per square yard
    *Follow ASTM standards: product must not be less than *95% sodium chloride*.
  - -**Calcium chloride**: use about *1 handful* for every *3 square yards*
- Shovel the snow early and often. If the temperature drops after a snowstorm, the snow can turn icy and be harder to remove.
- The more scraping and removal of ice that you can do, the less deicer you will need to use. Deicer works best on a thin layer of ice.
- After you remove all of the snow and ice, sprinkle deicer (salt) sparingly.
- When temperature rises, the deicer will make a slushy mixture of water and ice. Remove this layer before the temperature drops again. This practice should keep you with an ice-free surface until the next winter storm.
- If possible, use treated salt (pre-wet/ brine) which will accelerate melting, use less salt, as well as cutting cost, time, and decrease need for additional applications (*saving time, money, and energy)*

Tips to reduce negative impacts of salt products:

- Plant salt tolerant trees, plants, and shrubs in areas where there is salt application or higher rates of it
- Plant salt tolerate species to create natural buffer zones to reduce threat of contaminated runoff into waterways, wildlife habitat, and drinking water supplies

Be an informed consumer: chemical deicers and other marketed products

New products with progressive promises and appealing names are introduced every year. These products are usually either patented, proprietary mixtures of the same chemical deicers marked at a higher price. For more information regarding what chemicals to look for, search 'Road Salts' on cceonondaga.org.

Many road salt alternatives have a relatively short history of use and/or research behind them, making it unclear what the potential long-term environmental and human health impacts they may have. Continuing research, scientific analysis, and encouraging consumer precaution are highly encouraged.

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