



## Safe and Sensible Salting Practices at Home

The other day someone told me that their dog's paws were all cracked and injured from walking through the large amount of salt on the sidewalk in front of their condominium complex. Paw injuries and other impacts on pets are only one type of common problem caused by over-salting in the winter months.

In 2018 we are promoting the Stormwater Theme, "Steer Clear of Pollution, On the Road to Clean Water," and our winter focus is on Sensible Salting Practices. Continue reading to learn how road salt, (Sodium Chloride) can cause problems and harm our ecosystems and how you can adopt sensible salting practices at home.

Simple changes in the amount and the ways in which we salt in the winter can make a big difference in watershed health without jeopardizing our safety, and can also save communities and households money.

### Major Impacts of Road Salt (NaCl)

- Water Quality Impacts: Water contaminated with NaCl creates higher density runoff water and will settle at the deepest part of the lake, leading to chemical stratification. This can impede natural turnover of bodies of water like lakes, and this prevents the dissolved oxygen within the upper layers from reaching the bottom layers and the nutrients in the bottom layers from reaching the upper layers, which can lead to fish kills from oxygen deprivation. Elevated chloride levels can threaten the health of food sources for aquatic life and pose a risk to species survival, growth, reproduction, and survival rates. Excess salt also inputs high levels of chlorine to streams during dry periods, especially in the autumn. Elevated chlorine concentrations in the fall are easily increased to toxic levels during the winter months. It is estimated that sites with over 50% urban land cover exceed the US EPA water quality criteria for chlorine from 100-200 days per year.

- Other Environmental Impacts: Road salt negatively impacts our soil, water, vegetation, and wildlife.
  - Soil: Road salt destroys soil stability and decreases soil's ability to hold water. This increases soil erosion and the release of nutrients from the soil back into the water. Chlorine also gets transferred to the groundwater tables through the soil. When salt contaminates groundwater, it can pose a serious health threat to individuals who require a low sodium diet.
  - Wildlife Impacts: Birds often mistake road salt for seeds or grit, and ingestion can result in sickness and death. High concentrations of salt can be found in snow melt, which animals drink throughout the winter and can potentially lead to dehydration, salt toxicity, confusion, and weakness.
  - Vegetation Impacts: When salt leaves the road from splashing or spraying up, transportation by wind, or through snow melt in surface waters, it can cause dehydration and disrupt osmosis in plants. This can disrupt nutrient uptake and cause injury to the plants flowering, seed germination, and growth abilities.
  - Pet Impacts: When animals get road salt in their system it can cause serious negative health effects like depression, vomiting, seizures, cardiac abnormalities and many more. In terms of paw health, direct contact can produce painful irritations, inflammation and cracking that leads to infections.
  
- Economic Impacts: Road salt can become very expensive over the season. In 2007, 18.3 million metric tons of salt were sold, and the annual deicing costs for the United States are estimated to be around \$2.3 billion. However, road salt costs communities far more than just the purchasing cost. Corrosive to bridges, buildings, vehicles and infrastructure, road salt increases the maintenance costs of these structures by billions of dollars. Road salt also threatens drinking water supplies, especially in well-water areas. The disposal cost of road salt poses yet another burden on communities throughout the winter.

Here are some "Sensible Salting Practices" that we as residents and homeowners can all employ which will help to reduce the negative effects of sodium chloride on the ecosystems in our watershed!

- Shovel Snow: Removing snow and ice during a snowstorm, if possible, reduces the amount of salt required for deicing and increases the efficiency of deicing operations.

- Follow Application Instructions: People often equate using more salt with rapid melting time, but it doesn't work that way. Excess salt does not help melt ice but is only carried away to our waterways when the ice does melt. Following the application instructions reduces over-application of deicers.
- Reduce Chemical Application: Only apply road salt where you really need it. For example, you may not require access to every door into your house, but mainly use the front door. Create a path by shoveling snow to your front door and then apply the correct amount of road salt.
- Consider Temperature: Most road salts are ineffective below 15°, so if you do not waste your time applying salt when it will not help melt the ice! Sand can be coupled with salt for better traction but must be swept up after use because sediment is another major pollutant of our stormwater!
- Sweep Up Extra Road Salt: Excess salt does not help melt ice. If the ice is gone but there is still salt on your driveway, sweep it up because it is not doing anything beneficial.
- Pet Safety: Sodium chloride, calcium chloride, and magnesium chloride can burn your pets' paws. Potassium acetate is a safer alternative to use but can be difficult to find. Reduce your salt usage for your pets' sake and wash paws after walking your pets.
- Landscaping Plant Materials: Landscaping plants and trees around your home may be injured by excess road salt. There are some species that are more salt-tolerant than others, but as a rule you should avoid excess salt altogether to minimize the harmful and costly impacts on your landscaping plants.

For more information on sensible salting practices, you may contact Summit SWCD at 330-932-2456, or go to our website at: <http://sswcd.summitoh.net>. References used for this article were Tinker's Creek Watershed Partners and Winooski Natural Resources Conservation District in Berlin, Vermont.