

This Winter, Why not Try a Low-Salt Diet?

According to Brooke Asleson, Minnesota Pollution Control Agency (MPCA) project manager for the Twin Cities Metro Area chloride project, “Salt (rock or table salt, sodium chloride) is a real threat to water quality. It only takes one teaspoon of road salt to permanently pollute five gallons of water. We are trying to spread the word that less is more when it comes to applying road salt because at high concentrations, chloride can harm the fish and plant life in our waters.”

When snow and ice melts, the salt goes with it, washing into our lakes, streams, wetlands, and groundwater. Once in the water, there is no way to remove the chloride.

Jerry Hinderman, NOHOA Director of Roads, says that NOHOA uses about 150 tons of salt and 1000 tons of sand for our 50 miles of road each year. Since North Oaks does not have many storm sewers, sand is used to a much greater extent than in cities that have them. In comparison, Mahtomedi uses 350 tons of salt and 100 tons of sand for its 50 miles of roads. Mahtomedi, and a number of other cities, is converting to an anti-icing program that applies a brine prior to a storm, further reducing the amount of salt used as well as labor costs. NOHOA tested anti-icing last year and had improved ice control. New equipment was purchased for this winter season.

Many residents also use salt on their driveways and walkways. Safety is the major concern. There are ways to reduce salt usage and still maintain high safety standards:

- Shovel or plow before driving on the snow. Once compacted, the snow is much harder to remove.
- Try using less salt. Using more salt does not mean more melting. Mix it with sand for better traction, and since salt stops working around 15 degrees use only sand when it is colder. Sweep up any spilled salt.
- You can make your own anti-icing spray by mixing deicer crystals with hot water and spraying before a storm.

While many products contain a mixture of ingredients, the most common deicing chemicals are:

- Sodium Chloride (rock salt): This is the cheapest deicing material, but its disadvantages are that it only works down to 15° F, is damaging to concrete and plants, and unhealthy for pets.
- Potassium Chloride: Works similar to rock salt, is better for areas with warmer winters, and is one of the less toxic options for fish and plant life.
- Calcium Chloride: Works at much lower temperatures (down to -20° F) and is less toxic. An advantage of calcium chloride is that it attracts water and creates heat: it will actively dissolve ice rather than sit on top of the ice.
- Magnesium Chloride: Has similar qualities as calcium chloride, but works down to about 5° F.
- Urea: Deicers containing urea or chemical fertilizers may seem good for your lawn, but they're the most corrosive to concrete and are not recommended.

- Other Options: There are also a few options for non-chloride based deicers. Calcium magnesium acetate (CMA), is a more environmentally friendly deicer made from limestone and acetic acid.

In its study of the effects of road salt on the environment, the MPCA has learned that:

- High concentrations of sodium and chloride are often found in pockets in the groundwater.
- There is a legacy effect of salt in the environment, which means that concentrations in surface and groundwater will increase, perhaps for decades, even if we stop using road salt today. So, the average concentration we see today could be much higher in the future.

Additional reasons we should be concerned about road salt are that road salt can damage metal and concrete, contaminate drinking water, damage roadside vegetation, and accumulate in streams, lakes, reservoirs, and groundwater harming aquatic plants and animals. Trends show that, even in relatively rural areas, road salt is accumulating in our waterways. Because it can take decades for road salt to flush out of a watershed, increases in concentrations of salt may be seen even after its use has stopped. The combination of alarming increases in salt together with the time required for increases to cease indicate that it's important to address the problem now.

While safe roads are of utmost importance, recent research indicates that we can achieve safety while being more efficient and careful with our road salt. By combining efforts to improve efficiency in road salt use with alternative chemicals in targeted areas, we can make a difference and improve conditions for future generations and ourselves.

This winter, think about how you can reduce the impact of salt in your yard and neighborhood. More information is available at the MPCA's website:
<http://www.pca.state.mn.us/>.