Use de-icing salt sparingly to protect Minnesota waters

As the first snow of the season arrives, Minnesotans start thinking about clearing snow and ice from pavement – sometimes with salt. But when the snow melts or it rains, the salt, which contains chloride, runs into storm drains and into nearby lakes, rivers, and groundwater.

It only takes a teaspoon of salt to permanently pollute five gallons of water. There's no feasible way to remove chloride once it gets into the water, and we are finding increasing amounts of chloride in waters around the state. Salty water harms freshwater fish and other aquatic wildlife.

Scatter patterns

Though no environmentally safe, effective, and inexpensive alternatives to salt are yet available, smart salting strategies can help reduce chloride pollution in state waters. You might think more salt means more melting and safer conditions, but it's not true! Salt will effectively remove snow and ice if it's scattered so that the salt grains are about three inches apart. A coffee mug full of salt (about 12 ounces) is all you need for a 20 foot driveway or 10 sidewalk squares (roughly 1,000 square feet). Consider using a hand-held spreader to apply salt consistently, and use salt only in critical areas.

And sweep up any extra that is visible on dry pavement. It is no longer doing any work and will be washed away into local waters.

Melting Agent	Lowest Melting Temp.*	Things to Know
Urea	20°F	Promotes algae growth in waterways; over-application can harm plants; slow-acting; relatively pet-safe
Sodium Chloride (NaCl)	15°F	Harmful to plants; harmful to concrete; very corrosive to metal; cheap and abundant
Magnesium Chloride (MgCl2)	-10°F	Harmful to plants; corrosive to metal; relatively high-cost
Potassium Acetate (KAc)	-15°F	Can cause surface slickness; lowers oxygen levels in waterways; biodegradable; relatively high-cost
Calcium Chloride (CaCl2)	-20°F	Corrosive to metal; leaves slimy residue; less harmful to concrete
Sand	No melting	Provides traction only; potential pollutant; can be swept up and re-used

Photo by Mississippi Watershed Management Organization

Additional tips for limiting salt use:

- **Shovel.** The more snow and ice you remove manually, the less salt you'll have to use and the more effective it can be.
- **15 degrees F and below is too cold for salt.** Most salts stop working at this temperature. Use sand instead for traction, but remember that sand does not melt ice.
- **Slow down.** Drive for the conditions and make sure to give plow drivers plenty of space to do their work. Consider purchasing winter (snow) tires.
- **Hire a certified Smart Salting contractor.** Visit the MPCA's Smart Salting webpage for a list of winter maintenance professional specifically trained in limiting salt use.
- **Promote smart salting.** Work together with local government, businesses, schools, churches, and nonprofits to advocate for reducing salt use in your community.

Adapted from the Minnesota Pollution Control Agency