**Salting the Earth**

 When the City of Carthage fell at the end of the Third Punic War, 146 BC, victorious Romans pulled Phoenecian ships out of the harbor and set them on fire before moving through the city, house to house, rounding up and selling 50,000 people into slavery. Then they set the city on fire. As a final insult before they left, it is said that the Roman soldiers sprinkled salt upon the ground to ensure that nothing could ever grow there again.

During the 17th and 18th centuries, Spain and Portugal punished traitors within their empires by executing them and then pouring salt on their land. Closer to home, some say that Union soldiers salted the fields in Georgia during General Sherman’s infamous March to the Sea (though it’s not likely they used very much, since salt was a hot commodity during the American Civil War).

Throughout history, pouring salt on the land has symbolized a curse not only for current inhabitants, but also for future generations. Then, during the winter of 1941-42, New Hampshire became the first state in the U.S. to apply salt to roads to help melt snow and ice more quickly. The U.S. used a total of 5000 pounds of road salt that year. After World War II, road salt became more common. One million tons of salt were used in 1955, and 10 million in 1972. By 2017, local, state and federal highway departments were applying 19.8 million tons of salt every year to roads across the nation.

Whose future do we seek to curse?

Though the Roman and Union soldiers’ salting of the earth may have been mostly symbolic, our modern communities face the very real risk of suffering unintended consequences from using road salt, year after year. There is currently no practical technology for removing salt from our surface and groundwater resources and soil once it is there, so the only solution is to use less salt and hope that it doesn’t build up too quickly.

In Minnesota, 50 lakes and streams have already been contaminated by too much salt and another 120 are near the threshold for impairment. Recent research reported in the Proceedings of the National Academy of Sciences suggests that chloride concentrations are increasing in roughly one-third of all lakes in the northern U.S and Canada. Even the groundwater we drink is at risk. Almost 30% of shallow wells in the Twin Cities metro area have been found to have chloride concentrations above the recommended level for drinking water.

We all value our safety when driving in winter weather, but clean water and healthy soils are vital to our long-term survival as well. Here are five suggestions from local experts on how each of us can help:

1. **Drive slower and wear appropriate shoes when it’s snowy and icy outside.** This helps to support road maintenance crews, as well as large parking lot owners, in their efforts to reduce salt use.
2. **Use less salt on your own driveway and sidewalk.** One pound of salt (one heaping coffee mug) is enough to clear a 20-foot driveway or 10 sidewalk squares (250 sq. ft.). Always shovel before using salt.
3. **Skip the salt when it is colder than 15°**. Salt works by lowering the melting temperature of ice so that it melts when the temperature is below freezing (32°F). However, traditional road salt (sodium chloride) doesn’t work when it’s colder than 15°F, so it is a waste of time and money to put down salt on very cold days. Magnesium chloride and calcium chloride work at colder temperatures (-10° and -20° respectively) but can be more expensive.
4. **Sweep up and reuse left-over salt after the ice melts.**
5. **Stop using your water softener if your water hardness is less than 120 mg/L CaCO3**. If you do need a water softener, switch from a timer-based to a demand-based system and install a bypass for your outside spigot so that you aren’t softening water for irrigation.

Learn more about the impacts of chlorides on local lakes and streams and what you can do at: [www.pca.state.mn.us/water/chloride-salts](http://www.pca.state.mn.us/water/chloride-salts).