

**The Price of Safe Travel:  
The Environmental Costs of  
Road Salts**

*By Willistown Conservation Trust  
Watershed Conservation Research  
and Data Specialist Anna Willig*

*Photos by Jennifer Mathes*

Salt levels have increased dramatically in U.S. streams since the 1940s, when it became common practice in the U.S. to salt roads and sidewalks during winter storms. The Pennsylvania Department of Transportation applies over 800,000 tons of road salt per year to state roads in addition to a similar amount applied by municipalities and private citizens. These numbers add up to over 1.5 million tons of road salt applied per year in Pennsylvania alone, all of which eventually ends up in waterways. Though salt is naturally present in streams at trace concentrations due to the weathering of rocks and soils, the insects, fish, mussels, and amphibians that live in local waterways cannot tolerate the spikes in salt concentration that occur in winter.



Ashbridge Ridley Creek

Here at Willistown Conservation Trust (WCT), our Watershed Protection Program has been studying salt pollution in our local waterways by measuring chloride concentrations in the headwaters of Ridley, Crum, and Darby Creeks. Chloride concentration is an indicator of salt pollution, and we found that it was typically highest during the winter months, often spiking during warmer periods after a snowfall. As snow melts, it washes road salts into streams, increasing chloride concentrations.

Road salts threaten streams in two ways. During and after a winter storm, salt concentrations in streams can skyrocket as salty meltwater rushes in, creating conditions that are acutely toxic for fish and other stream creatures. Salts also build up in soils and in groundwater, slowly entering streams throughout the year and resulting in chronically elevated salt concentrations. Many stream organisms, particularly freshwater mussels, cannot tolerate these long-term increases in salt concentration and gradually disappear from streams.

Salt contamination in streams also harms human health and infrastructure. Road and sidewalk salt can end up in drinking water wells and water supplies and often is not removed by water treatments facilities. As salts move through the environment, they can pick up other pollutants along the way, further contaminating streams and drinking water. Salts also speed up the corrosion of metal pipes and concrete, shortening the lifespan of infrastructure. Similarly, overuse of salt rusts and corrodes cars, leading to expensive repairs.

**While road salt is necessary for safety, here are some ways to reduce salt pollution:**

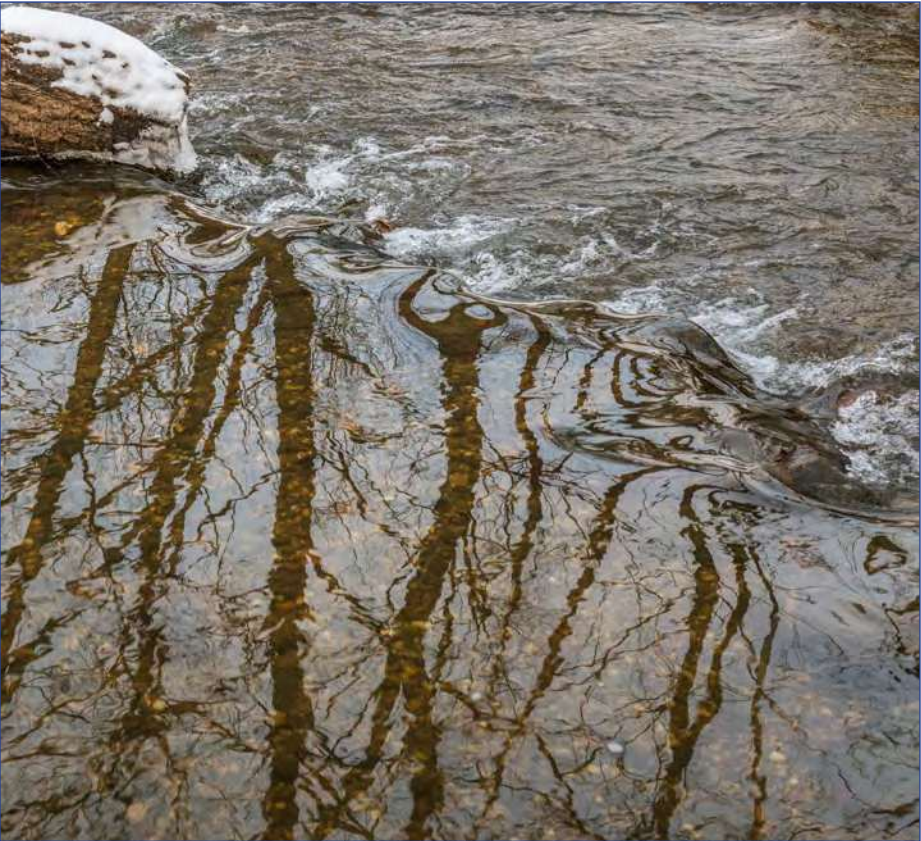
- Shovel your driveway or sidewalk before applying salt. Even on cold days, the sun can still melt a thin layer of snow and may take care of the problem for you.
- Do not use more than the recommended amount of salt. Only 1 mug full of salt, or 12 ounces, is required to melt a 20-foot-long driveway. Read the instructions on your bag to see how much you need for your driveway or sidewalk.



Crum Creek Hildacy Preserve

- If you feel crunching when you walk, you applied too much! Salt only works when it dissolves, so all the crystals that you feel crunching underfoot are not actually melting snow and ice.
- After the snow and ice have melted, sweep up any remaining salt! Save it and apply it during the next storm.
- Consider using a 1 to 1 mix of sand and salt to further reduce salt use.
- Report large piles of salt on roads to your local municipality. The contact information for the Malvern Borough is 610-644-2602 or [malvern@malvern.org](mailto:malvern@malvern.org).
- Share information about road salt and encourage your neighbors to use less!

Overall, it is important to be aware of the potential impacts of road salts on our water systems and to take steps to reduce salt pollution. By being mindful of how we use road salts, we can help to protect the environment and ensure that our water remains clean and safe for all to enjoy. You can learn more about the WCT Watershed Protection Program and their studies on local waterways by visiting [wctrust.org/watershed](http://wctrust.org/watershed).



Kirkwood crum creek

About Willistown Conservation Trust: Found 20 miles west of Philadelphia, Willistown Conservation Trust focuses on 28,000 acres within the watersheds of Ridley, Crum and Darby Creeks of Chester and Delaware Counties. Since 1996, WCT has helped permanently conserve over 7,500 acres, including three nature preserves open to the public: Ashbridge Preserve, Kirkwood Preserve, and Rushton Woods Preserve, which is home to Rushton Conservation Center and Rushton Farm. The Trust offers six nationally renowned programs for public engagement and research: the Bird Conservation, Community Farm, Education and Outreach, Land Protection, Stewardship, and Watershed Protection Programs. [www.wctrust.org](http://www.wctrust.org).



Rushton Frozen Creek