Common road salt is toxic to the Adirondacks

By David Gibson, Partner with *Adirondack Wild: Friends of the Forest Preserve*

Outside my house, and in the forest back beyond the land is carpeted with crystalline beauty, affording quietude, serenity, thermal shelter for critters, and some nice ski runs. Out on the county road, just two hours after the recent storm the pavement is bare – right on schedule with transportation departments' standard for road maintenance and safety. To accomplish it, a corrosive pollutant will be laid down in quantity – 900,000 tons of road salt will be used across the state this winter according to the DOT website.

A search of the DOT website reveals little about the polluting, corrosive impacts of sodium chloride, the most heavily used anti or deicing compound. One detects awareness of the problem in the reports from DOT regions which seek to "sensitize" its workers on best management practices for road salt applications, or experimental/spot use of alternatives to sodium chloride such as magnesium or calcium chloride which have basically the same ecological damage, but don't result in as much corrosive damage. But there is nothing comprehensive, and certainly nothing urgent about such an important matter, which is why we can be thankful for ADK Action and Paul Smith College's Adirondack Watershed Institute's Feb. 2010 report. This report prepared by the Institute's Dan Kelting is nothing if not comprehensive, substantive, data-rich about the science and impacts of road salt on Adirondack environments, natural and constructed. See AdkAction. Org for the report *"Review of Effects and Costs of Road De-icing with Recommendations for Winter Road Management in the Adirondack Park."*

Periodically, DOT comes to report to the Adirondack Park Agency on road salt use in the Adirondacks. They cite best management practices for determining real time road conditions, method and rate and timing of applications, accurate spreading equipment, and alternatives to the polluting chloride ion. I recall one DOT verbal report a decade or so ago to the APA which spoke to the need to educate county and town maintenance crews and upgrade their trucks and salt spreaders. However, despite the recent Adirondack report and the publicity it received, there is still no sense of urgency or priority on the DOT website. DOT always comes down to the bottom line. Sodium chloride is "cheap." It costs $42 per ton, calcium chloride $140/ton, magnesium chloride $111/ton and the product with the least environmental and corrosive impact, calcium magnesium acetate, costs $1,500 per ton.

In November, Adirondack Wild and a group of students from Pace Law School visited Dan Kelting, the author of the report and director of the Watershed Institute at Paul Smith's College. Dan showed maps contained in the report which dramatically indicate the extent to which the 10,000 miles of state, county and local highways in the Adirondack Park interact with lakes, ponds, streams and aquifers. Well over half of the surface acres of water in the Park interact with the highways (as a result of drainage from actual intersection with water). About half of the highway lane miles in the Park are underlain by underground aquifers. Use of road salt has elevated chloride concentrations in lakes and ponds adjacent to highways in the Park by more than twenty times, on average, when compared with Forest Preserve lakes and ponds far from our highways.

A key finding in the report is that road salt impacts on waters and forests, to say nothing of the impact on steel (our cars and bridges) and concrete, have hidden costs that in dollar amounts are more than twice what is spent to lay down a road mile of salt. Canada lists sodium chloride deicers as toxic material. Excessive road salting has polluted municipal wells in Keene and Lake Pleasant, resulting in great expense to restore potable drinking water to these communities.

While completely replacing sodium chloride with alternative deicers in the Adirondacks is not realistic, the report lists key actions and practices which could greatly reduce impacts and amounts of traditional deicers. These include:

- road maps to help tailor amounts, methods and rates of salt applications depending on the ecology and terrain
- new computerized real time weather and road condition systems for all trucks
- fine tuning spreading equipment to reduce the amount of deicers needed to do the job effectively
- better training of all operators
- Alternative deicers

The report is in, and there are clear and urgent reasons to take action. Adirondack waters are the root cause of the constitutional and other legal protections afforded the Park since 1885. The Catskill Park and region is the major source of NYC's drinking water. If Canada can declare road salt a toxic substance, it is high time for New York's Governor Andrew Cuomo to take action by ordering a comprehensive approach to expeditiously reduce the amount of polluting, corrosive deicers in these otherwise protected Parks through use of best management practices and alternatives.