



WNRCD

*Educational Series*



## Major Impacts of Road Salt (NaCl)

- ◆ Water Quality Impacts: Water contaminated with NaCl creates higher density water and will settle at the deepest part of the lake leading to chemical stratification. This can impede turnover of bodies of water like lakes, and therefore preventing the dissolved oxygen within the upper layers to reach the bottom layers and the nutrients in the bottom layers to reach the upper layers.
- ◆ Health Impacts: If salt contaminates drinking water, it can pose a serious health threat to individuals who require a low sodium diet.
- ◆ Pet Impacts: Ingestion of road salt can serious negative health effects like depression, vomiting, seizures, cardiac abnormalities and many more. In terms of paw health, direct contact can produce painful irritations, inflammation and cracking that leads to infections.



- ◆ Wildlife Impacts: Birds often mistake road salt for seeds or grit, and ingestion can result in sickness and death. High concentrations of salt can be found in snow melt, which animals drink throughout the winter and can potentially lead to dehydration, salt toxicity, confusion, and weakness.
- ◆ Aquatic Life Impacts: Elevated chloride levels can threaten the health of food sources for aquatic life and pose a risk to species survival, growth, and/or reproduction.
- ◆ Vegetation Impacts: When salt leaves the road from splashing or spraying up, transportation by wind, or through snow melt in surface waters, it can cause dehydration and disrupt osmosis in plants. This can disrupt nutrient uptake and cause injury to the plants flowering, seed germination and growth abilities.

## Best Management Practices (BMPs) to reduce amount of salt and still keep roads and pathways safe

- Salt-Brine Mixture with a Spreader

Mixing solid salt with liquid salt brine is a cost-effective anti-icing agent because the liquid brine coating “sticks” the solid salt to the road and reduces loss due to bounce or being blown off the road.

Costs: Spreader is around \$35,000 as well as facility to make the brine

- Corn syrup & Molasses

Use salt pre-treated with molasses, corn syrup or beet juice prior to mixing the road salt with brine. This offers an alternative to rock salt that is better for the environment and cuts costs. However, there may be other side effects from the sugar and other chemicals from the corn syrup and molasses to the ecosystem

Costs: Initial costs involved with obtaining the correct equipment necessary to spread and make the treated salt.

- Pre-wetting the Salt

Spray salt pile with pre wetting liquid ( like 23% sodium chloride brine, 32% calcium chloride, Magic Minus Zero) to improve the melting abilities of the mixture so you do not have to add as much.

Costs: Don't have to buy as much salt, and the price of the liquid chosen

- Cover salt and sand piles

Cover sand and salt piles when not in use to prevent spreading of material into drains and streams

Costs: cost of tarps

- Calibrate Truck and Drive Slower

Figure out how salt the machines actually put down on the road. Calibrate the machine by changing gate height. Try to reduce the width of the spread. When driving over 25 mph the road salt bounces off the road so keep going below 25 mph to make sure salt stays on the road

Costs: your time



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The Winooski Natural Resources Conservation District is one of 14 conservation districts throughout Vermont. It encompasses all of Chittenden and Washington County as well as parts of Orange County (Orange, Williamstown and Washington). The District relies on grants and individual donations to complete its conservation work. The WNRCD focuses its resources on completing conservation projects within the areas of agricultural assistance, forestland enhancement, urban conservation and watershed stewardship. For more information on Conservation initiatives within the District, please visit: [www.winooskinrcd.org](http://www.winooskinrcd.org)



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