



Keep Plowed Snow Away From Our Coastal Waters

A Bay Paper from Friends of Casco Bay



Friends of Casco Bay
Casco BAYKEEPER

Did you know that “pure as the driven snow” is anything but?

- Nowadays, many parents don't let their kids eat snow because of all the things that fall from the sky along with it—soot, acids, hydrocarbons, and more. Once snow hits the ground, it can pick up road salts, motor oil, dirt, pet waste, litter, and even cyanide.
- All this gets piled up into snow banks or trucked to snow dumps, creating mini-Everests over the course of the winter. In the spring, polluted meltwater releases a toxic shock of harmful chemicals that marine life cannot handle.
- Maine law requires that snow dumps be set back only 20 feet from our productive and economically-important coastal waters. This is about the width of a two-lane road.

Background: Plowed snow is a problem for the ocean

When you walk past any shoreside snow pile, you will see dirt, litter, dog feces, and maybe even a shopping cart. What you cannot see will be all the toxic substances that can do real harm to freshwater and marine environments.

Since the ocean is primarily saltwater, how could adding more salt be harmful? Most marine creatures can tolerate only a narrow range of salinity. Chloride, primarily in the form of sodium chloride, is the main ingredient in road salt. Sodium can stimulate the growth of nuisance algae blooms. This “green slime” is already a serious problem here, resulting in algae-covered coves, dissolved oxygen low enough to stress marine life, and acidic, “dead” mudflats where clams and other important intertidal species no longer thrive.

The other main ingredients in road salt are sand, calcium chloride, and magnesium chloride. All forms of chloride readily dissolve in water. A 2010 report on Maine winter roads stated, “All of the chemicals used on roads end up in soil and water.

Chloride salts degrade water quality, soil quality, and the ecosystem. There is ample evidence that salt is increasing in the aquatic environment in both the short term (months) and the long term (years).”

In addition to chlorides, road salt contains other elements, such as phosphorus, nitrogen, copper, and even cyanide. Cyanide is lethal to organisms in saltwater at very low levels. Cyanide in concentrations as low as 0.01 milligrams per liter can rapidly and lastingly impair the swimming ability of salmon.



Snow plowed from city streets is piled up in snow dumps. This is what was left when one snow dump melted, leaving pollutants you can see, and many that you can't.

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As it falls, snow scavenges airborne pollutants from vehicle exhaust and smokestack emissions from as far away as Ohio. Plowed snow picks up road salts, motor oil, dirt, pet waste, heavy metals, and even cyanide. According to Gary L. Oberts, the leading researcher on stormwater management in cold climates, “High levels of chloride, lead, iron, phosphorus...and total suspended solids have been reported in snow dump runoff.”

In 2008-09, a study was done of four highway facilities in Maine where sand and salt were stored in uncovered piles. The study detected exceptionally high levels of sodium chloride and total cyanide in adjacent surface waters next to all four storage facilities. Total cyanide levels exceeded guidelines set by the EPA. A growing body of research led Canada to designate road salt as an environmental toxin in 2001. Astonishingly, Maine law allows snow to be piled a mere 20 feet from our productive and economically-important coastal waters.

Is brine a solution?

Everyone wants safe roads and a clean environment. Brine, called liquid salt, has proven effective in preventing ice build-up on our roads, and it drastically cuts down on the amount of salt that enters the environment. When brine is applied before a storm, public works departments use 75% less salt. Unlike road salt, brine doesn't bounce or blow off roads as it is applied; it settles into crevices in the street.



What is Friends of Casco Bay doing about it?

Friends of Casco Bay is pressuring municipalities not to site snow dumps near the ocean.

Friends of Casco Bay is using the Clean Water Act and the Natural Resources Protection Act to persuade the Maine Department of Environmental Protection that snow dumps should be sited at least 100 feet from our coastal waters.

Friends of Casco Bay is working to prevent communities from dumping snow directly into the ocean. It is already illegal to dump snow into fresh water.

Friends of Casco Bay is a community-based nonprofit organization founded in 1989, to improve and protect the environmental health of Casco Bay. Home to the Casco **BAYKEEPER**®, we are a founding member of the international **WATERKEEPER**® ALLIANCE.

What can I do about it?

- Stockpile snow at least 100 feet from coastal waters.
- Pre-treat roads with brine, which contains only about 25% salt, before a snowstorm.
- Site snow dumps on soil, where meltwater can be absorbed and filtered naturally, not on tarred surfaces or near storm drains.
- Surround snow dump areas with salt-tolerant shrubs and other plants to keep snowmelt on site instead of flowing into streams and coastal waters.
- Remove accumulated litter and sand from snow dump areas after the snow melts.

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