Date: Mon, 24 Feb 2003 20:38:55 -0400
To: PABIODIV@webmail.upb.pitt.edu
From: Gregory <meg5@psu.edu>
Subject: Re: PABIODIV: Snow and River Species

I did a newspaper feature about this during the winter of 2001-02. Went up to the Bear Creek Maintenance complex in Luzerne County and watched a PennDOT crew mix up a batch of "brine" -- sodium chloride and water. The mixture was then sprayed on Rt. 115 in Luzerne from a tanker truck. They also use another mix, from sodium chloride too, I think, that's sprayed from smaller tanks mounted on the tailgate of plow trucks.
Alan Gregory

At 04:59 PM 2/24/2003 -0500, Leonard Hess wrote:
Another point: I've seen PennDOT trucks with tanks attached to the tailgates. I remember reading somewhere that the state is now using liquid de-icers, similar to chemical de-icers used at airports, on roads in lieu of salt. Numerous airports, including Pittsburgh International, have been cited for discharge of de-icers into streams, and have been required to install closed systems. Does anyone know what the chemicals used in road de-icers are, and their impact on streams and aquatic life?

Len Hess
Saltsburg, PA

----- Original Message -----
Date: Mon, 24 Feb 2003 12:53:51 -0400
From: "Earle, Jane" <jearle@state.pa.us>
To: PABIODIV@webmail.upb.pitt.edu
Subject: RE: PABIODIV: Snow and River Species

I came to a similar conclusion, that much of the snow was plowed with little salting because it was so deep. I believe that the so called nuisance snows and freezing rains have a higher potential for salt runoff. Harrisburg city streets were white from salt through much of February after the lesser snows, but not as much with the big snow. The dilution rate would be less too, I would think with the lower snow falls. I think the potential for salt runoff accumulation is a bigger problem in the smaller streams with lesser flow volume to dilute the salt. I am not saying that it is OK to dump the snow into rivers, but the dilution rate in rivers should be higher than for the runoff into smaller streams. The worse scenario would be a few-inch snowfall with rain soon after, that washes all the salt into the streams. That problem points out the importance of riparian buffers.

I not am aware of many scientific papers on the effects of salt runoff. I have been studying stoneflies for the past 20+ years. Some streams in the Laurel Ridge area where the PA Turnpike crosses do have higher concentrations of salt even in the summertime than those elsewhere. In one watershed there, Indian Creek, where I studied the stoneflies over a 4 year period, I did not see huge effects of the salt on stoneflies- still a high diversity of "sensitive" species. I did not sample in the far upstream areas near the turnpike, however, I did sample about one mile downstream on the main stem and farther downstream on 2 tributaries that the turnpike crosses that had relatively high concentrations of salt.

Salt would have a much worse effect if it ran off during the summertime when stream flows are much lower. The normally higher water flows in the winter and spring should help dilute the salt and cause less of a problem for stonefly nymphs. Some of the winter stonefly species are emerging now. I have not yet seen the high numbers of winter adults yet because it has been so cold here in Pennsylvania. They seem to be waiting for warmer days to emerge. These winter species are generally rather tolerant of most pollutants because the nymphs are only active in the fall and winter when water is cold and pollutants are diluted. Few stonefly nymphs are active in the summertime when conditions would be at their worst. There are a lot of misconceptions about stoneflies, mostly from blanket generalizations, including those that lump them all into the "very sensitive category". They are a bit hardier than most people realize. Warm water, excess organic nutrients, and sediment are the pollutants that affect them

the most. However, most of the winter emerging species are rather tolerant of these three pollutants. Stoneflies are not all that close to the bottom of the food chain either- some species are predators of other aquatic insects.

Sustainability for PA - It's in Our Hands
http://www.dep.state.pa.us/earthdaycentral/03/

-----Original Message-----
Date: Sun, 23 Feb 2003 14:32:56 -0400
Subject: Re: PABIODIV: Snow and River Species
From: Phil Coleman <philipy@verizon.net>
To: PABIODIV@webmail.upb.pitt.edu

Does anyone know how much greater the dosage is for snow dumped directly compared to runoff of melted snow, such as we are having now. One good thing about this snow was that, at least in western PA, there was proportionately very little salting. Highways and towns began by plowing without salt or cinders virtually until the snow quit falling.

Phil Coleman
551 Pittsburgh Road
West Brownsville, PA 15417
724-785-5887

Date: Fri, 21 Feb 2003 16:38:49 -0400
From: Sue Thompson <sthomp@andrew.cmu.edu>
To: PA Biodiversity Listserve <PABIODIV@webmail.upb.pitt.edu>
Subject: PABIODIV: Snow and River Species

From Grist Magazine:

The massive storm that dumped feet of snow on the Northeast over the weekend was lovely to look at, fun to play in -- and bad news for some river species. In an effort to unbury themselves, many cities in the region dumped plowed snow directly into nearby rivers, a practice some scientists warn could harm stone flies, a delicate insect species near the bottom of the food chain. The flies, which help break down organic matter and are eaten by trout and other large fish, are just beginning to emerge at this time of year and are highly sensitive to water quality. As a result, stone fly populations could be devastated by the increased salinity resulting from the dumped snow, which contains substantial quantities of the salt used as a melting agent on roadways. Pennsylvania and West Virginia have no rules against dumping plowed snow in waterways; New Jersey and Massachusetts do, but both state suspended their rules in the aftermath of the storm.

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