

Study finds removal of roadside salt pools can protect salt-toothed moose from crossing roads

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"Sodium concentration is two or three times higher in roadside salt pools compared to aquatic plants, yet those salt pools increase the probability of moose-vehicle collisions by 80 percent," says Paul Grosman, a graduate student in the Concordia University Department of Geography, Planning and Environment. Credit: Concordia University

Country roadways can be hazardous for moose and men. According to estimates, millions of vehicles collide with moose, elk and caribou in North America and Europe each year. Moose, in particular, venture to roadsides to lick the salt pools that collect following pavement deicing.

Because moose are the largest animal in the deer family, with males weighing up to 720 kilograms, their salt cravings can pose significant risks to human and vehicle safety. That's why a group of Canadian researchers has investigated ways to encourage moose away from roads.

In a new study, published in the journal *Ecological Modelling*, lead author Paul D. Grosman reports how the large [mammals](#) can adeptly recall the salt pools they visit in previous years. "When the scheduled time came to go to a salt pool, moose moved directly to it with purpose," says Grosman, a graduate student in the Concordia University Department of Geography, Planning and Environment. "Sodium concentration is two or three times higher in roadside salt pools compared to aquatic plants, yet those salt pools increase the probability of moose-vehicle collisions by 80 percent."

To avoid moose-man collisions, the best scenario is to completely remove roadside salt pools, Grosman stresses: "If compensation salt pools are used, they should be located as far as possible from the roads – beyond 500 meters."

Grosman conducted his investigation with Concordia professors Jochen A.G. Jaeger and Pascale M. Biron, as well as colleagues from the Université du Québec à Rimouski and the Ministère des Ressources naturelles et de la Faune du Québec (Quebec Ministry of Natural Resources and Wildlife). The research team focused on a portion of the Laurentides Wildlife Reserve, situated between Quebec City and Saguenay, which features two provincial highways crossing its territory.

Some 47 tagged moose were monitored for three years via global positioning system as they travelled, rested and foraged. A computer-animated control group of 40 moose served as a point of comparison.

The research team tested various scenarios, such as removing salt pools altogether or creating compensation salt pools. Although moose could travel as much as 10 kilometers to drink from salt pools, their road crossings could be reduced by as much as 79 per cent when all road-side salt pools were removed.

"The most effective management strategy is to remove all salt pools, without creating any compensatory ones, and let [moose](#) return to foraging for aquatic plants to satisfy their sodium dietary requirement," says Grosman, noting that other costlier security measures include fencing highways or building wildlife underpasses.

Provided by Concordia University

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