



## Reducing roadkill: driver awareness needs improving

**Wild animals** are more likely to be hit by vehicles during times when roads have poorer surface conditions and during periods of low light, according to a study of moose in Sweden. The researchers emphasise that it is not possible to accurately predict hotspots for wildlife collisions using data on the movement of the animals alone, and suggest that efforts to reduce accidents should focus on driver awareness and road conditions.

The frequency of vehicle collisions with wildlife is expected to rise as road networks and traffic volumes increase, with negative impacts for biodiversity. The identification of collision 'hotspots' can help conservation managers develop strategies that reduce the risk of vehicles hitting wildlife. Previous efforts to pinpoint high risk zones have tended to focus on either data about actual accidents, or data on animal movement, but this study, part-funded by the EU<sup>1</sup>, emphasises that both sets of data can help to accurately predict hotspots.

The researchers reached this conclusion by comparing data on the movement of moose with police data on traffic accidents with moose in northern Sweden. They found that collisions were not necessarily most likely to occur on roads that experienced higher levels of animal crossings, and identified several other factors at play.

A total of 102 female moose in the rural Provinces of Västerbotten and Norrbotten were fitted with GPS collars, and their movements were tracked over a two and half year period. From this GPS data, the researchers calculated how many times the moose crossed roads, where and when, to try and predict high risk times and locations for collisions. As may be expected, the number of crossings increased during migration periods, peaking in May, June, and between November and January.

By law, moose-vehicle collisions in Sweden have to be reported to the police, and are typically reported by local hunters who take care of the injured or dead animal. When the researchers assessed police data representing 1158 incidents over a two year period, and compared them with the movement data, they saw that accident rates did not necessarily correspond with the busy migration periods. Collisions were most likely to occur between the months of October and January, and during the hours of 16.00-20.00, i.e. during periods of low light.

They also deduced from the police data that collision risk is greater where traffic speed is higher and in areas close to human settlement. The collision risk was lower on forest roads. While this may be partly because there is more traffic in more developed areas, it may also reflect driver awareness; drivers are less likely to expect to see moose in built up areas.

Combining accident data with animal movement data proves useful in predicting collision hotspots, says the study, as animal movement data do not provide a full picture of risk, but indicate movement corridors, and while police accident data tend to provide a fairly accurate time of collision, the accuracy of the accident location varies considerably.

Based on its findings, the study suggests that measures to reduce accidents with animals should focus on increasing driver alertness during certain times of the year, perhaps through a warning system, and in locations along animal migratory routes.

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