

Abstract

# The Diversity of Roadkilled Semi-Aquatic Mammals Depends on Registration Effort <sup>†</sup>

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**Abstract:** Previously, we showed that registration effort and traffic intensity explain 90% of variation in roadkill numbers, 70% of variation in numbers of recorded species and 40% of diversity variation (Balčiauskas et al., 2020). Here we analysed the comparatively rare roadkills of semi-aquatic mammals in Lithuania, northern Europe, covering the period of 2007–2021, relating these to monitoring effort. From over 30,000 roadkills, European beaver was registered 43 times, American mink 26 times, otter 22 times and muskrat two times, with the average roadkill indexes being 0.000065, 0.00076, 0.00061 and 0.00010 ind./km/day, and the maximum indexes being 0.067, 0.028, 0.048 and 0.016 ind./km/day, respectively. These data show the roadkills are not common events. Their occurrences did not correspond to population numbers (beaver over 40,000, American mink about 8–10,000 and otter about 3–5000 individuals in 2020–2021) nor to traffic intensity. However, for all these species, registration effort (number of times the route was driven, this being 300–400 on the most investigated routes) was the main factor, with more registrations being on the small number of best-sampled main roads. As two of these species, American mink and muskrat, are invasive species in EU, while otter is protected in most of the countries, registrations of their roadkills should be enhanced (using targeted efforts by hunters or citizen scientists for example) in order to obtain a better approximation of the roadkilled numbers of these species and thus be able to use this knowledge in species management.

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