

Factors influencing vertebrate carcasses retention time on roads: a preliminary study on Mediterranean context.

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Monitoring vertebrate roadkills is a task increasingly done in the last decades in order to better evaluate the impact of roads on wildlife. However, these studies usually underestimate the real number of road kills counts, due to the sampling strategy and because large time intervals (frequently weekly monitoring) are used between surveys. On summer of 2005 in central of Portugal, we carried out in a 26 km stretch of a main national road, a trial survey consisting in 31 consecutive day's road kill monitoring. The initial position of the corpse on road and spatial geographic location were registered. Species biomass, daily temperatures, precipitation and traffic load were also considered as possible factors affecting the number of days the carcass remain on the road after animals have been hit by a vehicle.

We used the Cox regression to model the survival time that road killed vertebrates remain on the road. A total of 188 corpses belonging to 40 vertebrate species were recorded. The biomass was the only significant factor influencing the maintenance of a corpse on the road. Larger individuals (>500g) have 0.65 probability of remaining on the road after three days, comparing to 0.35 for medium (150g-500g) and 0.2 for small individuals (<50g). By the end of the trial survey, the majority (more than 95%) of the medium and small animals have already disappeared, while 20% of the larger animals may persist. Moreover, we would have lost almost 70% of the corpses if road kills were monitored twice a month and almost 55% under a weekly survey.

Our results may have important conservation implications when planning road kills monitoring, because small species with a high conservation concern (e.g. bats) may not be counted on twice a month or weekly surveys.

Key words: carcass survival time, vertebrates, roadkills, Cox regression, Portugal.