Highway widening and underpass effects on vertebrate road mortality

Abstract
Road widening (a.k.a. road dualling) and the presence of mitigation structures may have opposing effects on the number of animal-vehicle collisions. Their influence in tropical areas is poorly quantified, and we know little about how modifications of road structure affect fauna roadkill and mitigation. We evaluated how road widening and proximity to a wildlife underpass affect roadkill of medium and large mammals, using roadkill records from before and after the widening of 150 km of road with new and old wildlife underpasses. Roadkilled species were divided into three groups based on mobility and sensitivity to human disturbance. Four of 16 species exhibited significantly higher roadkill after widening. Roadkill near underpasses was generally higher than by chance, despite our expectation of reduction in roadkills. This result indicates that we must adopt more effective mitigation measures, such as appropriate fencing combined with underpasses. Abstract in Portuguese is available with online material. (AU)