Index ranking of priority sites for mitigation of wildlife road-kill

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We propose an index ranking of priority sites for implementation of measures to mitigate wildlife road-kill. We conducted a case study along 34 km of highway BR 392 in southern Brazil. We compared site priorities established only by road-kill rates, and those defined by our index. The index uses four parameters: the target-species richness, the diversity of road-killed species, the road-kill rate of target species, and the presence of endangered species. Although it is impossible to protect the entire community of vertebrates affected by road-kill, we defined nine target species, five mammals and four reptiles. For each parameter we defined coefficients from 0 to 3. The maximum value for a site index was 12, but in practice the maximum value was 8. Considering only road-kill rates, a total of 12 sites received priority. Using the hierarchical index, we identified 16 sites. The implementation of mitigation devices led to a significant change in site priority, and to changes in the protected species. When only the road-kill rate was included, the definition of priority sites protected especially reptiles, to the detriment of all mammal species, including those threatened with extinction. Sites with high road-kill rates continued to be rated among the most important for conservation, but the index diluted the effect of this parameter, changing the priority. We suggest that, when available, the parameters of richness, diversity, and endangered species in the area surrounding the highway be incorporated into the index. This index can be an effective tool to aid government agencies in decision-making, especially when more elaborate analysis is not feasible for reasons of insufficient time, resources, or trained personnel.