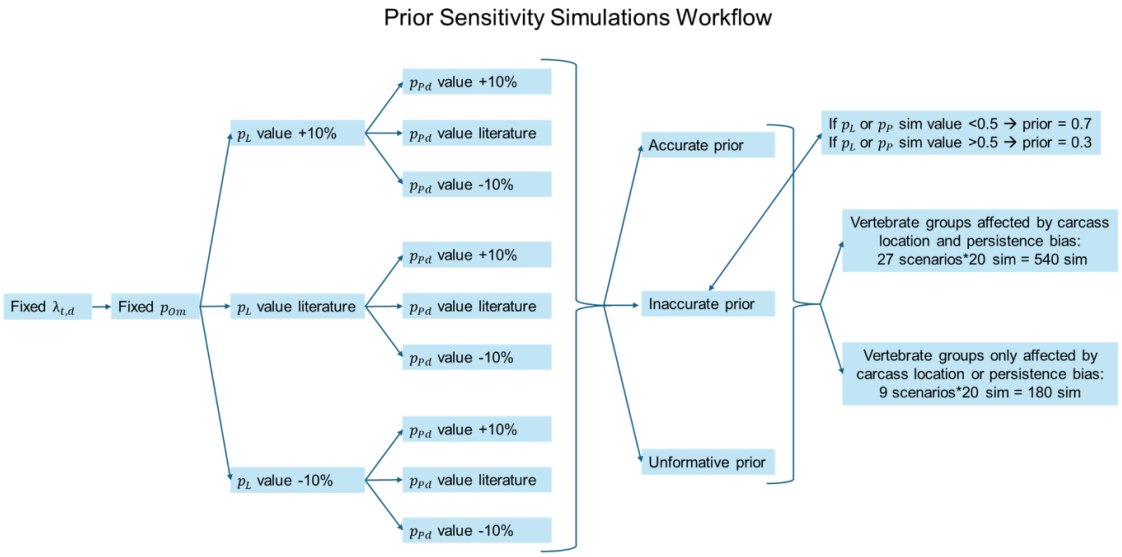

Supplementary Material S7: Simulation workflow of the prior sensitivity analysis. We simulated data by fixing daily mean number of roadkills $\lambda_{t,d}$ and carcass observation probably per survey method p_{Om}, while varying carcass location p_L and daily carcass persistence p_{Pd} probabilities by ±10% relative to values derived from literature (see Table 1 in the main text), a deviation selected because larger deviations would result in parameter combinations that are rarely observed in nature (Barrientos et al., 2018; Román et al., 2024; Santos et al., 2016). Each simulated scenario was analysed under three prior specifications: accurate, inaccurate set to 0.3 or 0.7 when p_L or p_P —average carcass persistence probability in the D-day period— true value in simulated data was >0.5 and <0.5, respectively), and uninformative. This design resulted in 27 distinct scenarios and a total of 540 simulations per vertebrate group affected by carcass location and persistence bias, while 9 distinct scenarios and a total of 180 simulations per vertebrate group only affected by carcass location or persistence bias.

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