

Smallwood, K.S. 2007. Estimating Wind Turbine–Caused Bird Mortality. *Journal of Wildlife Management* 71(8): 2781-2791.

Mortality estimates are needed of birds and bats killed by wind turbines because wind power generation is rapidly expanding worldwide. A mortality estimate is based on the number of fatalities assumed caused by wind turbines and found during periodic searches, plus the estimated number not found. The 2 most commonly used estimators adjust mortality estimates by rates of searcher detection and scavenger removal of carcasses. However, searcher detection trials can be biased by the species used in the trial, the number volitionally placed for a given fatality search, and the disposition of the carcass on the ground. Scavenger removal trials can be biased by the metric representing removal rate, the number of carcasses placed at once, the duration of the trial, species used, whether carcasses were frozen, whether carcasses included injuries consistent with wind turbine collisions, season, distance from the wind turbines, and general location. I summarized searcher detection rates among reported trials, and I developed models to predict the proportion of carcasses remaining since the last fatality search. The summaries I present can be used to adjust previous and future estimates of mortality to improve comparability. I also identify research directions to better understand these and other adjustments needed to compare mortality estimates among wind farms.