Supplementary information for

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A new method to determine bird and bat fatality at wind energy turbines from carcass searches

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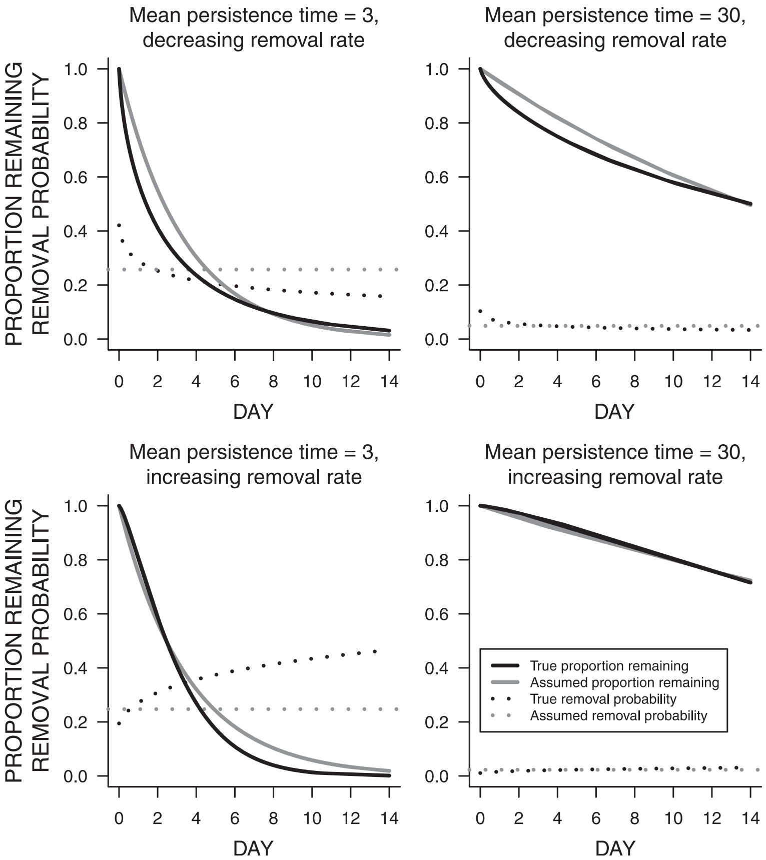

Figure S1. Effect of assuming a constant removal probability when it is actually decreasing or increasing in time. Proportion of remaining carcasses (solid black lines) and the corresponding daily removal probabilities (dotted black lines) for four simulation scenarios. To obtain the proportions of remaining carcasses and the removal probabilities, Weibull distributions for the persistence times were assumed. For simulating decreasing removal probabilities with time, α was set to 0.7, and for increasing removal probabilities α was set to 1.3. λ was then obtained using the mean assumed persistence time T: $\lambda = (\Gamma(1 + (1/\alpha)))/T$. The proportion of remaining carcasses per day is $S(t) = e^{[-(\lambda t)^{\alpha}]}$ and the daily removal probability $(1\text{-}s(t)) = 1 - e^{[-(\lambda(t+1))^{\alpha}]}/e^{[-(\lambda t)^{\alpha}]}$, where s is the probability that a carcass remains ('survives') one day. Grey solid lines are the proportion of remaining carcasses under the (false) assumption of a constant removal rate (grey dotted lines).

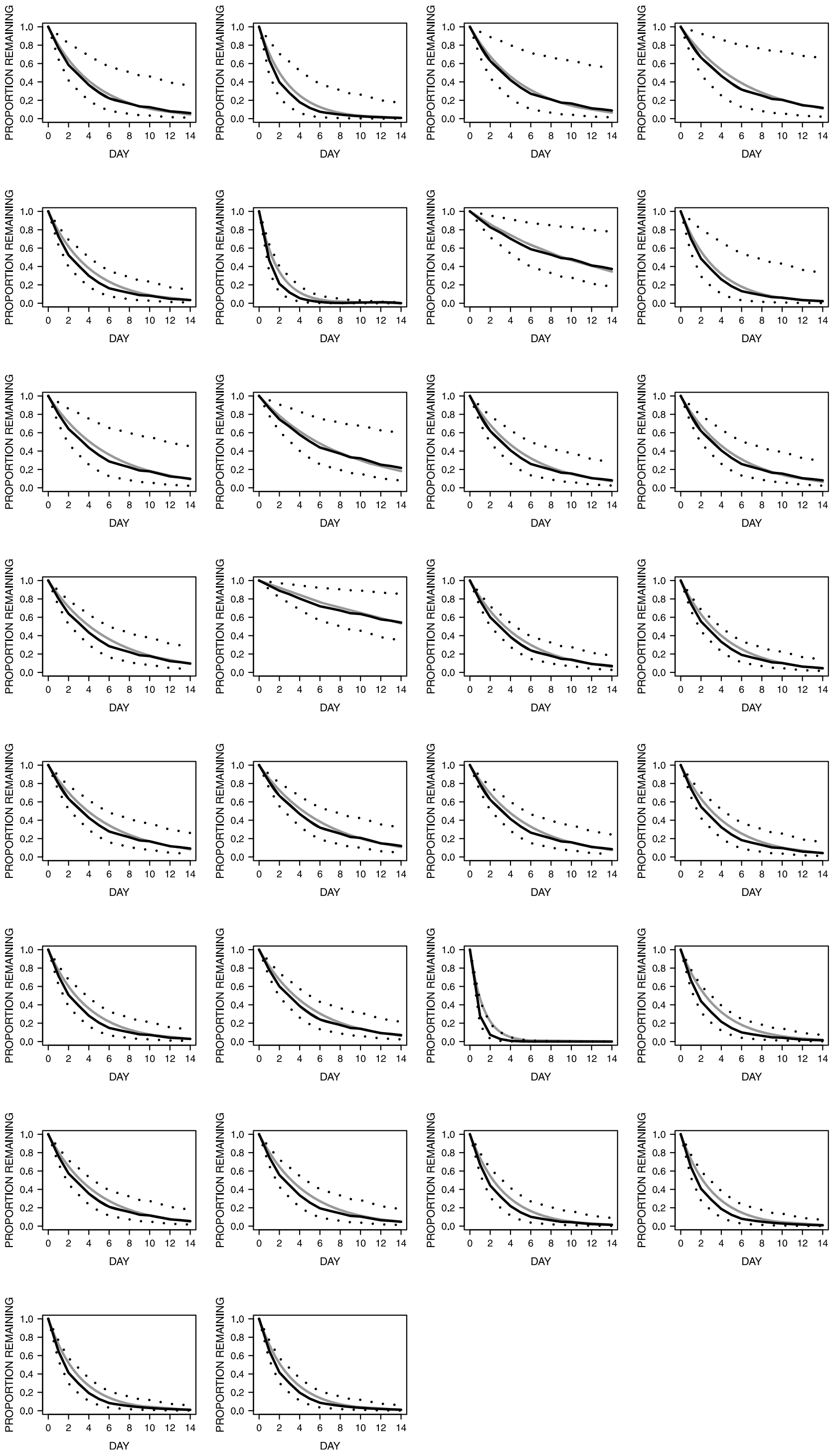

Figure 2. Proportion of remaining carcasses of bats and brown mice at 30 wind energy turbines in Germany (see Niermann et al. 2011) over the first 14 days. The black line gives the proportion of remaining carcasses (with 95% confidence interval within the dotted lines) estimated by a non-parametric Cox proportional hazard model with turbine as a grouping factor. This model does not assume constant removal rates. The grey line gives the same proportion estimated by assuming an exponential distribution of the persistence times, i.e. constant removal rates. In total 662 carcasses (32 bats and 630 brown mice, 7-35 per turbine) were used.