

Bird and bat deaths at wind turbines found to increase during species' seasonal migrations

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Scissor-tailed flycatcher perches on a fence with a wind turbine in the background. Credit: Matt Hamilton, CC-BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>)

Bird and bat fatalities at wind turbines increase during seasonal migrations—information which could aid their protection, according to a study published May 10, 2023, in the open-access journal *PLOS ONE* by John D. Lloyd from the Renewable Energy Wildlife Institute of Washington DC, U.S., and colleagues.

While there have been local and regional studies on bird and bat deaths caused by wind turbines, this study looks at data from 248 wind turbine facilities across the United States—almost 30% of all U.S. turbine facilities—in order to study broad patterns in bird and bat fatalities at these sites.

The authors analyzed daily carcass counts between 2009 and 2021 for birds (3,789 in total) and bats (10,291 in total) killed at turbine sites where specific dates were provided.

The resulting models showed that the seasonal pattern of collision fatalities reflects the ecoregions where wind turbine sites are constructed and operated. Most U.S. facilities are in the prairies and plains of the central and western states, where many species of grassland birds are present year-round and are consistently exposed to collision risk.

In contrast, woodland birds are only affected by these facilities during their long-distance migrations and showed two peaks in fatalities, corresponding to spring and fall migrations. Regardless of ecoregion, bat fatalities peaked in the late summer and autumn, with elevated numbers of bat fatalities from mid-June to mid-November. For migratory tree bats, species present in multiple ecoregions tended to show earlier [fatality](#) peaks in more northerly ecoregions, presumably reflecting the southward [migration](#) of these bats.

The authors were only able to use 114 of 370 potential datasets that met their requirement of a complete search schedule. They call for more

complete data reporting from U.S. wind facilities in order to describe these fatality patterns with greater detail. Based on their findings, they also note that adjusting curtailment requirements for wind facilities to be more ecoregion-specific might enable specific turbine sites to operate more frequently, while protecting greater numbers of sensitive bird and bat species.

"First and foremost, this study helps us understand why certain species of birds and bats are more likely to collide with [wind turbines](#) than others," said John Lloyd, the lead author. "But it also highlights the power of collaborative research—our analysis, and the patterns that it uncovered, was only possible because we could draw on data from hundreds of different studies conducted across the United States and compiled in the American Wind Wildlife Information Center."

More information: Seasonal patterns of bird and bat collision fatalities at wind turbines, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0284778](#)

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