



Wind Energy & Impacts to Migratory Bats

Wind energy likely has population-level impacts on some migratory bat species, but technology and responsible turbine operation can minimize fatalities.

Wind is an important source of renewable energy and a critical part of our green energy future. However, research from the last decade has shown that hundreds of thousands of bats are killed by wind turbines each year. A recent study determined that collisions with turbines have the potential to cause population-level declines in at least one migratory bat species. Fortunately, promising technology is in development to deter bats from approaching wind turbines and until these deterrent technologies become commercially available, wind facilities can voluntarily adopt operational changes to reduce bat fatalities. Conservation organizations, corporate energy purchasers, and the wind energy industry can work together to save these bat species and ensure that Americans do not have to choose between reducing greenhouse gas pollution and protecting our rich wildlife legacy.

Bats and wind

Over half a million bats are killed by wind turbines each year in the United States, and almost 80 percent of the bats killed are hoary bats, eastern red bats, and silver-haired bats. These three species are migratory bats which are not affected by white-nose syndrome, the pathogenic fungus driving numerous other bat species towards extinction. Wind energy is their greatest known threat.

Population-level impacts

Bats are long-lived mammals that reproduce slowly; their populations are very sensitive to losses of breeding-age adults. Scientists are concerned that high levels of bat mortality from wind turbines could cause population-level impacts.

According to research published in *Biological Conservation* in May 2017, mortality from wind turbines could cause hoary bat populations to decline by 90 percent in the next 50 years if adequate voluntary conservation measures aren't widely adopted across the wind industry. While several wind industry leaders are working proactively to better understand how best to minimize impacts, a broader and more aggressive industry-wide response is needed, particularly as wind energy development expands.

Although this study focused on hoary bats, because of their similar life histories, there is concern that eastern red bats and silver-haired bats may also be experiencing population-level declines.

Moving forward

Fortunately, there are solutions within reach that will allow this important industry to thrive while conserving these critical bat species. Indeed, some facilities are already implementing operational practices to reduce bat mortality, and several wind industry leaders are hosting research at their facilities to



Hoary bat (Jens Rydell)

evaluate new bat-detering technologies. Promising efforts are underway towards commercializing these technologies, such as high frequency sound emitters to discourage bats from approaching turbines.

The most readily available method for reducing bat fatalities is to prevent turbine blades from spinning at low wind speeds during peak migration periods, when bats are most likely to be flying through wind farms. This operational curtailment can significantly lower bat mortality (by up to 90 percent) with limited loss of energy generation.

Defenders of Wildlife is fully committed to supporting wind energy development while conserving bats. We are working to educate corporate buyers about the importance of purchasing wind energy from responsible operators, while simultaneously advocating for federal, state, and private investment in advancing and commercializing technical solutions to reduce impacts. Tackling this issue now is critical to securing a strong future for the wind energy industry and these bat species. ●