



GUIDELINES FOR BAT MONITORING AT WIND FARMS

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Wind power is one of the fastest growing forms of renewable energy around the world. In South Africa two wind farms have been constructed and are currently operational, namely the Klipheuwel and Darling wind farms on the West Coast in the Western Cape. Proposals to construct many more have been submitted mainly along the West Coast, East Coast and the Central Karoo. Wind farms are considered integral to the development of the green economy, which is an economy driven by technologies which reduce emissions and pollution, enhance energy and resource efficiency, and prevent degradation of species and ecosystems. Wind farms appear to be less harmful to the environment than burning fossil fuels because they do not directly generate greenhouse gas emissions. But for birds and bats, wind farms can be potential death traps.

Throughout North America and Europe large numbers of bats die each year as a result of the turbines at wind farms. Scientists predict that by 2020 between 33 000 and 111 000 bats will be killed each year by wind farms in the mid-Atlantic highlands of the USA alone. According to Kath Potgieter, Senior Field Officer for the EWT's Wildlife and Energy Programme, "Much research has focused on the impacts of turbines on bird populations but little has been done on bats, despite bat fatalities at some wind farms outnumbering bird fatalities by 10:1. Bat fatalities are caused by more than just collisions with the turbine blades – they are also affected by a phenomenon called barotrauma. Barotrauma occurs when the lungs of the bats are damaged by sudden changes in air pressure close to the turning blades of the turbines and this results in numerous losses."

Bats are relatively long-lived mammals. One bat, weighing a mere seven grams, lived to 41 years in the wild. Because they live so long and females only have one, or sometimes two pups per year, bat populations may take many years to recover if their numbers are reduced. Although bats do have natural predators, including the specialised Bat Hawk *Macheiramphus alcinus* the greatest negative impacts on the species are as a result of human activities such as poisoning, disturbing roosts, habitat destruction and now, wind farms. Misconceptions about bats have not made them very popular creatures even though they play a vital role in maintaining biodiversity and in the sustainability of the environment through, among other things, acting as pollinators and seed dispersers and consuming massive amounts of potentially damage causing insects.

Whilst environmental impact assessments are conducted for all new wind energy facility developments in South Africa, to-date, there have been no systematic studies on the impacts of wind turbines on bats in South Africa. As a result, conspicuous gaps in knowledge on the subject exist. Systematic and accurate monitoring of the effects of wind farms on bat populations is thus imperative to fill these gaps in knowledge, inform developers and develop ways to mitigate the effects.

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The Endangered Wildlife Trust is a non-profit, public benefit organisation dedicated to conserving species and ecosystems in southern Africa to the benefit of all people.

NPO Number: 015-502, **PBO number:** 930 001 777, **Member of IUCN** - The International Union for Conservation of Nature
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“The newly completed *South African Good Practice Guidelines for Surveying Bats in Wind Farm Developments*, produced by the Endangered Wildlife Trust in conjunction with independent eco-consultant and trainer Sandie Sowler; Stellenbosch University postdoctoral fellow Samantha Stoffberg; and endorsed by the South African Wind Energy Association; highlights the need to assess the impact of wind farms on ecology, as well as the importance of bats in the context of the ecosystem services they provide. In addition it provides guidance on assessing the need for monitoring and preparing, planning and implementing bat monitoring in respect to wind farm development. The guidelines aim to standardise data collection and results interpretation and proactively address any possible negative impacts before it is too late,” said Potgieter.

In January this year the EWT facilitated a Bat and Wind Farm Interaction Training Course in the town of Greyton in the Western Cape. The course was attended by representatives and researchers from a range of organisations involved with bat research, conservation and monitoring. The goal of the course was to build capacity amongst practitioners and ensure a standardised approach to work in the field. The good practise document is designed specifically to facilitate this.

In conclusion, Potgieter stated, “In order to ensure that vital renewable energy advancements in South Africa are not going to have significant negative impacts on our bat populations, it is critical that both the government and the developers recognise the need for standardised, professional, environmental impact assessments and that these assessments be conducted in line with international norms.”

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