Where implant wind turbines and their offset measures in a farming landscape to mitigate the negative impacts of the establishment on bats?

Kévin Barré*[1], Romain Julliard[1], Isabelle Le Viol[1], and Christian Kerbiriou[1]

[1]Centre d'Ecologie et des Sciences de la COnservation – Museum National d'Histoire Naturelle - MNHN (FRANCE), CNRS : UMR7204 – 61 rue Buffon, 75005 PARIS, France

Abstract

Wind farm developers have to provide an effective avoidance and a reduction of the negative impacts on biodiversity (bats in our case), and to implement offset measures when residual impacts persist. Offsetting consists in implementing measures (e.g. hedgerows) that counteract the residual loss of biodiversity and generate gains through management measures in order to achieve a no net loss or a net environmental benefit. Indeed, due to the reluctance of local people to install wind turbines near their homes, project developers often attempt to install wind energy facilities on agricultural land, particularly in arable land dominated by open fields or wooded countryside. This involves two reflection levels at different times of the establishment project:
1- Where implant wind turbines in relation to hedgerows that already exist in the landscape?

2- Where implant compensatory hedgerows in relation to wind turbines after their setting up?
We studied the impact distance of wind turbines by revulsion on bat activity measured on hedgerows, sampling simultaneously similar types of hedgerows in a same landscape. The aim was to find the better distance between wind turbines and hedgerows, in order to avoid impacts on bats. However, it also exist an attraction of wind turbines on bats. Therefore we studied the relationship between the bat activity and the distance to hedgerow, with (and without) wind turbine, sampling simultaneously wind turbines at different distances to hedgerows (and simultaneously their control without wind turbines in a same context), in order to take this into account in the spatial implant.

Keywords: bats, wind turbine, impacts mitigation, offset measures, hedgerows, spatial implant

*Speaker