

Tellería, J.L. 2009. Wind power plants and the conservation of birds and bats in Spain: a geographical assessment. *Biodiversity and Conservation* 18:1781-1791.

Abstract: The number of wind power plants installed in Spain has increased dramatically, and many are located in important wildlife areas. This paper explores the geographical overlap of wind power plants with the ranges of flying vertebrate species. The list of animals studied includes bats, soaring birds, and other birds that may be killed by turbines. Results show that the 10×10 km UTM squares occupied by wind power plants fell within the range of more bat and bird species than squares free of these infrastructures. For species included in the Spanish Red List, there were more wind power plants than expected inside the range of two raptors (*Neophron percnopterus* and *Circus pygargus*) and less than expected in six species (*Ciconia nigra*, *Aquila adalberti*, *Hieraetus fasciatus*, *Myotis capaccinii*, *Rhinolophus mehelyi* and *Myotis myotis*). The rest of endangered species (15) had a range occupation similar to that predicted by random sampling, a result that reflects a poor strategy to prevent the overlap. These patterns may be explained by the small amount of overlap of the range of many of these animals with the windiest areas in Spain, where wind power plants are concentrated today. However, this situation is changing rapidly with the densification and expansion of wind power plants promoted under the Spanish Plan of Renewable Energies. This may produce the occupation of many areas important to bird and bat conservation, and therefore preventive measures should be implemented to protect these species and their habitats.