

Kuvlesky, W.P., Jr., L.A. Brennan, M.L. Morrison, K.K. Boydston, B.M. Ballard, and F.C. Bryant. 2007. Wind Energy Development and Wildlife Conservation: Challenges and Opportunities. *Journal of Wildlife Management* 71:2487-2498.

Abstract: Wind energy development represents significant challenges and opportunities in contemporary wildlife management. Such challenges include the large size and extensive placement of turbines that may represent potential hazards to birds and bats. However, the associated infrastructure required to support an array of turbines—such as roads and transmission lines—represents an even larger potential threat to wildlife than the turbines themselves because such infrastructure can result in extensive habitat fragmentation and can provide avenues for invasion by exotic species. There are numerous conceptual research opportunities that pertain to issues such as identifying the best and worst placement of sites for turbines that will minimize impacts on birds and bats. Unfortunately, to date very little research of this type has appeared in the peer-reviewed scientific literature; much of it exists in the form of unpublished reports and other forms of gray literature. In this paper, we summarize what is known about the potential impacts of wind farms on wildlife and identify a 3-part hierarchical approach to use the scientific method to assess these impacts. The Lower Gulf Coast (LGC) of Texas, USA, is a region currently identified as having a potentially negative impact on migratory birds and bats, with respect to wind farm development. This area is also a region of vast importance to wildlife from the standpoint of native diversity, nature tourism, and opportunities for recreational hunting. We thus use some of the emergent issues related to wind farm development in the LGC—such as siting turbines on cropland sites as opposed to on native rangelands—to illustrate the kinds of challenges and opportunities that wildlife managers must face as we balance our demand for sustainable energy with the need to conserve and sustain bird migration routes and corridors, native vertebrates, and the habitats that support them.