



AMERICAN SOCIETY OF MAMMALOGISTS

UNANIMOUS RESOLUTION

Effects of Wind-Energy Facilities on Bats and Other Wildlife

WHEREAS, wildlife conservation and energy efficiency should be major considerations in the development of viable sources of alternative energy (Government Accountability Office 2003; Arnett et al. 2007; National Research Council 2007); and,

WHEREAS, wind turbines were once assumed to have no adverse environmental impacts, however, onshore wind-energy facilities have killed thousands of bats and birds (Government Accountability Office 2003; Kunz et al. 2007b; National Research Council 2007); and,

WHEREAS, onshore wind-turbine construction and associated infrastructure have pronounced effects on wildlife habitat (Government Accountability Office 2005; Arnett et al. 2007), including increased habitat loss and fragmentation and subsequent loss of species from areas around developments, and alteration of dispersal or migration corridors; and,

WHEREAS, many onshore and offshore wind-energy facilities are being planned and constructed without adequately considering the potential or actual effects on wildlife (Barclay et al. 2007; Cryan and Brown 2007; Kunz et al. 2007b; National Research Council 2007); and

WHEREAS, fatalities of bats and other wildlife at existing onshore wind-energy facilities have raised concern that wind turbines may have population-level impacts on these species (Kunz et al. 2007b; Arnett et al. 2008); and,

WHEREAS, researchers independent of the wind industry have been unable to adequately evaluate the magnitude of impacts because of limited access to wind-energy facilities, but preliminary results indicate that species such as migratory tree bats already may be experiencing fatality rates that will lead to population declines (Kunz et al. 2007; Arnett et al. 2008); and,

WHEREAS, the cumulative impacts of wind-energy development on wildlife likely will increase as new facilities are constructed (Kunz et al. 2007b; National Research Council 2007); and,

WHEREAS, proposed and existing wind-energy projects have the potential to severely impact species that cross state and national borders, particularly continental migrants, such that no single state or regional agency can adequately analyze or assess the cumulative impacts of these projects on wildlife (National Research Council 2007; Arnett et al. 2008); and,

WHEREAS, scientific guidance and leadership are required before negative effects on wildlife become severe and irreversible (Kunz et al. 2007; Arnett et al. 2008);

THEREFORE BE IT RESOLVED that the American Society of Mammalogists, meeting at their 88th Annual Meeting, South Dakota State University, Brookings, South Dakota, 21-25 June 2008, recommends the following steps be implemented to provide appropriate protection for our valuable wildlife resources:

(a) Commitments to comprehensive environmental assessments that include multi-year pre- and multi-year post-construction studies be made prior to selection and construction of sites for wind energy facilities (U.S. Fish and Wildlife Service, 2003; Government Accountability Office 2005; National Research Council 2007).

(h) Environmental assessments by professional biologists or organizations with no conflict of interest in any aspect of financing construction or operation of wind energy facilities (Kunz et al. 2007a; National Research Council 2007).

(c) Independent external review of evaluations and reports before siting of wind energy facilities to insure the techniques and interpretation of results are appropriate, adequate, scientifically rigorous, and in the public domain (Kunz et al. 2007a; Arnett et al. 2008).

(d) Siting and placement of turbines and their associated infrastructure to avoid fragmenting large contiguous tracts of wildlife habitat (Arnett et al. 2007; National Research Council 2007).

(e) Siting and placement that avoids bat hibernation, breeding, and maternity colonies, or flight paths between colonies and feeding areas (Arnett et al. 2007; Cryan and Brown, 2007; National Research Council 2007).

(f) Siting and placement to avoid local pathways of bat or bird migration or areas where these species are highly concentrated (Arnett et al. 2007; National Research Council 2007).

(g) Siting and placement that avoids documented locations of any species of wildlife protected under State or Federal authority, that could be affected adversely (U.S. Fish and Wildlife Service 2003; Arnett et al. 2007).

(h) Increased research on effects of onshore and offshore wind-energy facilities to assess the nature and extent of risks to wildlife (Arnett et al. 2007, 2008; Kunz et al. 2007a, 2007b).

(i) Systematic investigation of effectiveness of operational procedures, such as feathering of blades or voluntary temporary shutdowns that might reduce impacts of wind turbines on wildlife (Barclay et al. 2007; Cryan and Brown 2007; Horn et al. 2008; Kunz et al 2007a; National Research Council 2007).

(j) Implementation of scientific peer-review of all aspects of wind-energy development (U.S. Fish and Wildlife Service, 2003; Government Accountability Office 2005; Kunz et al. 2007b; National Research Council 2007).

References

Arnett, E. B., D. B. Inkley, D. H. Johnson, R. P. Larkin, S. Manes, A. M. Manville, J. R. Mason, M. L. Morrison, M. D. Strickland, and R. Thresher. 2007. Impacts of wind energy facilities on wildlife and wildlife habitat. Wildlife Society Technical Review 07-2. The Wildlife Society, Bethesda, Maryland, USA.

Arnett, E.B., K. Brown, W.P. Erickson, J. Fielder, T.H. Henry, G.D. Johnson, J. Kerns, R.R. Kolford, T. Nicholson, T. O'Connell, M. Piorkowski, and R. Tankersly. 2008. Patterns of fatality of bats at wind energy facilities in North America. *Journal of Wildlife Management* 72: 61-78.

Barclay, R.M.R., E.F. Bearwald, and J.C. Gruver. 2007. Variation in bat and bird fatalities at wind energy facilities: assessing the effects of rotor size and tower height. *Canadian Journal of Zoology* 85: 381-387.

Cryan, P.M., and A.C. Brown. 2007. Migration of bats past remote island offers clues to the problem of bat fatalities at wind turbines. *Biological Conservation*, 139: 1-11.

Government Accountability Office Report to Congressional Requesters. 2005. Wind Power, Impacts on Wildlife and Government Responsibilities for Regulating Development and Protecting Wildlife. GAO-05-906. Washington D. C., 64 pp. <http://www.gao.gov/cgi-bin/getrpt?GAO-05-906>

Horn, J. W. E. B. Arnett and T. H. Kunz. 2008. Behavioral responses of bats to operating wind turbines. *Journal of Wildlife Management* 72: 123-132. http://www.wind-watch.org/documents/wp-content/uploads/horn_et_al_2008.pdf

Kunz, T. H., E. B. Arnett, B. M. Cooper, W. P. Erickson, R. P. Larkin, T. Mabee, M. L. Morrison, M. D. Strickland, and J. M. Szewczak. 2007a. Assessing impacts of wind-energy development on nocturnally active birds and bats: a guidance document. *Journal of Wildlife Management* 71: 2449-4486. <http://www.wind-watch.org/documents/wp-content/uploads/wild-71-08-45.pdf>

Kunz, T. H., E. B. Arnett, W. P. Erickson, A. R. Hoar, G. D. Johnson, R. P. Larkin, M. D. Strickland, R. W. Thresher, and M. D. Tuttle. 2007b. Ecological impacts of wind energy development on bats: questions, research needs, and hypotheses. *Frontiers of Ecology and Environment*, 5: 315-324.

<http://www.windaction.org/?module=uploads&func=download&fileId=1293>

National Research Council. 2007. *Environmental Impacts of Wind-Energy Projects*. National Academies Press, Washington, D.C.

<http://www.eswr.com/latest/307/nrcwind.htm>

U.S. Fish and Wildlife Service. 2003. Memorandum to Regional Directors, Regions 1-7 on Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, 13 May 2003, 57 pp.

<http://www.fws.gov/habitatconservation/wind.pdf>