

The House Subcommittee on Fisheries, Wildlife and Oceans
Oversight Hearing on: "Gone with the Wind: Impacts of Wind Turbines on Birds and Bats."

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May 1, 2007,
Room 1324 Longworth House Office Building.

Chairman Bordallo, Ranking Member Brown, and distinguished members of the Fisheries, Wildlife and Oceans Subcommittee, I would first like to thank you for inviting me to testify on behalf of the American Bird Conservancy (ABC) on the effects of wind turbine energy projects on birds in the United States.

My name is Dr. Michael Fry, and I am the Director of the Pesticides and Birds Program at American Bird Conservancy,. In addition to being responsible for science and federal policy issues concerning pesticides, my job includes federal policy and science issues related to the effects of wind projects on mortality and habitat impacts to birds.

My qualifications include a PhD in Animal Physiology from the University of California, Davis, and 30 years experience in avian ecology and toxicology at the University of California and at American Bird Conservancy. I am a member of the Wildlife Workgroup of the National Wind Coordinating Committee, funded by the US Department of Energy I serve on the Minerals Management Service, Outer Continental Shelf Environmental Studies Program, Science Advisory Committee, and am Chair of the Subcommittee on Alternative and Renewable Energy.

American Bird Conservancy (ABC) is a 501(c)3 not-for-profit organization, whose mission is to conserve wild birds and their habitats throughout the Americas. It is the only U.S.-based, group dedicated solely to overcoming the greatest threats facing birds in the Western Hemisphere. In brief, ABC has been an active participant in national symposia on wind power, birds and wildlife for the past ten years and believes that with proper siting, operation, and monitoring, wind energy can provide clean, renewable energy for America's future with minimal impacts to birds and bats. ABC has developed a policy statement on wind energy and birds available on our website at:

<http://www.abcbirds.org/policy/windenergy.htm>

Unfortunately, to date, collaborative efforts to successfully address the impacts of wind projects on birds and wildlife have been a failure.

As members of this subcommittee may know, the Department of Energy formed a consensus-based collaborative in 1994, the National Wind Coordinating Collaborative (NWCC), which is comprised of representatives from the utility, wind industry, environmental, consumer, regulatory, power marketer, agricultural, tribal, economic development, and state and federal government sectors. The purpose of the collaborative

was “to support the development of an environmentally, economically, and politically sustainable commercial market for wind power”. The NWCC has been an active forum for discussion of environmental issues, and subcommittees of the NWCC have developed several fact sheets and methods and metrics documents in an effort to identify risks to wildlife from wind projects, and to recommend actions that could be taken by industry to prevent, reduce, or mitigate collision mortality and habitat destruction arising from the construction and operation of wind projects within the US.

My experience with NWCC, however, has been that there has been much discussion and almost no real action on the part of the wind industry to resolve bird collision issues at wind project areas.

The wind energy industry has been constructing and operating wind projects for almost 25 years with little state and federal oversight. They have rejected as either too costly or unproven techniques recommended by NWCC to reduce bird deaths. The wind industry ignores the expertise of state energy staff and the knowledgeable advice of Fish and Wildlife Service employees on ways to reduce or avoid bird and wildlife impacts.

Federal and state oversight for wind energy projects has been virtually nonexistent.

Federal participation in regulation and enforcement of wind energy has been particularly conspicuous in its absence. At Altamont Pass Wind Resource Area, more than a thousand Golden Eagles have been killed, and enforcement officials have archived carcasses for decades. Not a single prosecution for take of eagles has been brought by federal officials, and no adequate explanation has ever been provided to explain why the Bald and Golden Eagle Protection Act has been ignored for so long.

The Fish and Wildlife Service developed an interim series of voluntary siting guidelines in 2003, and revised them after a prolonged comment period in 2005. Federal guidelines must be required rather than voluntary. The wind industry has provided ample evidence that voluntary guidelines are regarded as unimportant and are thus summarily dismissed.

The State of California has worked diligently to document habitat issues and bird kills. They have recommended studies to evaluate techniques to prevent or minimize the killing of birds of prey at several wind resource areas in California. Permits for development and operation continue to be issued by California and its counties. They have done so after being promised by wind developers that the wind industry would take all measures “feasible” to prevent or minimize bird injuries and deaths. However, without any meaningful regulatory oversight or enforcement, the industry has exhibited very little change in its behavior over the past 25 years. Technology has advanced substantially, and promises have been made that newer technologies would reduce bird deaths, but very little evidence has been provided by industry to substantiate their claims.

In fact, when independent researchers finally gained access to the Altamont Pass area, under contract from the California Energy Commission, the results of their research and documentation were viscously attacked by staff from the California Wind Energy Association. Every effort was made to discredit the research and personally discredit the researchers. The NWCC website provides an excellent bibliographic resource to much of this information, and documents and links are available at:

<http://www.nationalwind.org/workgroups/wildlife/> ..

The State of Maryland has recently exempted wind projects from meaningful environmental review. Maryland has eliminated the requirement for a Certificate of Public Convenience and Necessity (CPCN) before construction of a wind farm. The law eliminates the ability of stakeholders other than the wind developer to have input into the process. The law now: 1) Exempts wind energy developers from obtaining a Certificate of Public Convenience and necessity (CPCN) from the Public Service Commission. The developer only needs a construction permit.; 2) Blocks the public from having meaningful participation in the decision process for wind energy projects; and 3) Prevents public and expert testimony at Public Service Commission hearings for wind energy projects proposed on state-owned lands and offshore, in waters of the Chesapeake Bay.

In summary, there has been a great deal of discussion and very little action on the part of industry and the federal government to resolve bird and wildlife issues.

Bird populations at greatest risk include birds of prey and grassland songbirds.

The bird species at risk at individual wind projects vary greatly, as habitats with good wind resource are highly variable across the US. In general, the two bird species groups at greatest risk are birds of prey, (both hawks and eagles that hunt during the day, and owls, which are nocturnal, and hunt at night) and grassland birds, species groups living in the Great Plains and in flat or rolling hill country in the Pacific Northwest, California, and Texas.

The bird species that have been documented to have the greatest risks from collision mortality are:

Collision Mortality Risk:

Birds of Prey:

Especially in California and the Pacific Northwest

Golden Eagles
Red-tailed Hawks
White-tailed kites
American Kestrels
Burrowing Owls
Barn Owls

Great Horned Owls

Grassland ground birds and songbirds:

Especially in the Pacific Northwest and Great Plains

Horned Larks

Mourning Doves

Swallows

Pheasants

Western Meadowlarks

Sparrows-several species

“Generalist” species, found in many places:

Gulls-several species

Common Ravens

Migratory birds

Warblers-several species

Thrushes

Wrens

Sparrows and finches

Bluebirds

Swallows

More than 50 species of other migratory songbirds

Habitat loss:

Especially in the Great Basin and the Great Plains and Texas

Sage grouse

Prairie chickens

Birds of prey have long been recognized as the most vulnerable group of birds to suffer direct mortality from collisions with rotor blades of wind turbines. It appears that resident birds are killed in the greatest numbers, that is, those birds that live in the area of the wind project and are apparently killed while hunting. This has been a particularly difficult problem in California at Altamont Pass and also at the Montezuma Hills wind area in Solano County. The risk to resident birds of prey appears directly related to the population density of birds of prey in the area. To date, very few well documented mitigation attempts have been tried to reduce the kills of birds of prey at existing wind projects.

There have been early planning efforts at one major wind project: Foote Creek Rim, Wyoming, where careful location of wind turbines to avoid raptor flight patterns has resulted in minimizing collision mortality of birds of prey. This type of effort should be undertaken at every wind project, early in the planning stages, prior to leasing land or siting turbines.

Grassland bird species are also at risk of both collision mortality and habitat loss. Horned Larks are a small songbird species that has been disproportionately killed at windfarms in the Great Basin and Great Plains, apparently because of courtship behaviors that involve aerial display flights that take the birds into the path of turning rotors. Other ground dwelling songbirds and grouse are not at as high risk from collision mortality, but may be at very high risk of disturbance and displacement from wind projects, because of their apparent aversion to tall structures. Active research sponsored by the NWCC and funded by others is ongoing, in an effort to identify the displacement risks to grassland species.

Habitat loss in Puerto Rico and threats to the endangered Puerto Rican Nightjar:

The Puerto Rican Nightjar is a critically endangered insect eating “Whip-poor-will” like species, with a total population estimated at less than 1700 individuals. They live in tropical dry forests at only a few locations in Puerto Rico, and have been listed as Endangered by the FWS since 1973. In 2006, the FWS granted an incidental take permit to destroy approximately 46 nesting territories in prime habitat in Guayanilla, Puerto Rico, to allow the construction of a major wind project (WindMar) in an area described as “marginal” wind resource by the Department of Energy. It is completely inexplicable why the FWS would grant such a permit to allow destruction of an endangered species for development of a wind farm at a marginal resource, with a very inadequate habitat conservation plan under the ESA. This is a prime example of the lack of regulatory oversight provided by the FWS to protect wildlife at wind projects.

A Proposal for Meaningful Federal Participation to solve wildlife problems:

While I know that it is not the Natural Resources Committee’s jurisdiction, there is a bill in the Ways and Means Committee to renew the production tax credit for wind energy, HR 197. ABC recommends that any renewal of the production tax credit include provisions that require meaningful research into ways of minimizing bird and bat kills by wind projects, and require developers follow standard Best Management Practices (BMPs) in avoiding and minimizing bird and wildlife impacts.

Below several important research topics that have not been adequately addressed since their discovery shortly after operation of the wind projects at Altamont Pass began 25 years ago. When answers to these questions are available, they should be incorporated into the BMPs, and enforced by the appropriate authorities. The logical federal agency to have authority over promulgation and enforcement of BMPs. would be the FWS.

- Require efforts to reduce habitat loss during construction and operation of wind projects.
- Require adequate studies prior to siting wind projects to avoid important and sensitive bird areas.
- Require modifications to locations or operation of turbines that kill a disproportionate number of birds.

- Require real-time radar to be installed at wind projects that are located in regions with high numbers of migratory birds, and require project shut-downs when flocks of birds at risk from collisions are detected approaching the wind project.

Critical research needs to be done in the following areas:

Identification of important bird areas.

These areas should be off-limits to wind development unless adequate preventative measures can be discovered to minimize incidental take of protected bird species.

Better analysis of direct mortality.

The methods used to evaluate collision mortality in operating wind farms are controversial and uncertain in their conclusions. Birds and bats killed by wind turbines are searched for by field teams at infrequent intervals, and the methods to extrapolate to the true number of birds or bats killed still remain controversial. For example, it is unknown whether small birds struck by a turbine blade moving with a speed of greater than 150 mph remain intact, or whether they disintegrate into a “poof” of feathers and small fragments. It is unknown how far carcasses of small birds that do remain intact can be catapulted by a turbine blade that is 130 feet long traveling at 150 mph. It is unknown how frequently and quickly scavengers remove carcasses of dead or injured birds, so that monitoring personnel (when present) do not observe the mortality. The formulas and algorithms used to estimate scavenging rates remain controversial and the environmental community remains skeptical of the accuracy of mortality estimates.

Do turbines on ridge tops significantly affect migrants?

The “typical” modern turbine is a 1.5 MW, 3 blade monopole turbine with a hub height 55-80 m (180-260 ft.) above ground level, and turbine blade length of 35-40 m (115-130 ft.). The rotor typically spins at 12-20 rpm, and the rotor tip travels at 150-180 mph. The height of the rotor, the speed of the blades, and the speed of the wind are all factors in where a bird carcass might land after being struck by a blade.

Recent published scientific reports indicate that greater than 10% of nocturnal migrating songbirds migrating over ridges fly at elevations putting them within the area of rotating turbines (Mabee et al. 2006, WILDLIFE SOCIETY BULLETIN 34(3):682–690). It is not known whether these birds are at risk of being struck by turbine blades, whether they can adequately avoid them, and whether inclement weather might increase the collision risk, as it does with communications towers.

What locations in the US are unsuitable for wind projects. This would be based on the presence of vulnerable bird and bat species.

What areas of the US are significant migratory corridors or broad regions with huge numbers of migratory birds, both songbirds and raptors?

The Gulf Coast of Texas and Louisiana are known to be critical passage areas for billions of protected migratory bird species. Weather radar has been employed to evaluate the numbers of birds migrating along the Texas coast, and flocks of millions of birds are routinely observed in spring and fall. Texas, however, does not even involve its Department of Parks and Wildlife in the permitting process, which is carried out by the Texas General Land Office. I believe this is totally unacceptable.

Can real-time radar and short-term turbine shutdowns successfully prevent mortalities of migrating birds without economic hardship to wind projects and without harmful interruptions to the electric grid?

Real-time radar is currently operational in Spain to prevent collision mortality to migrating birds of prey. This or similar technologies need to be developed in this country, in spite of the frequently heard statement that such measures are too costly, and that financiers of projects will not stand for the economic loss from temporary or seasonal shutdowns. The World Bank is requiring such technologies to be developed at wind projects in Mexico to prevent mortalities to migrating hawks that funnel through the Oaxaca region in very large numbers.

Can automated technologies be developed that detect bird strikes to turbine blades?

If acoustic, photographic or other sensitive automatic detectors could be developed within rotor blades or turbine hubs to monitor bird strikes, the uncertainty and expense of carcass searches and repetitious monitoring of wind farms could be eliminated, and better information on problem turbines would be generated. The costs of incorporating sensitive detectors into rotor blades or hubs would be very small compared to the overall costs, and cost reductions from reduced monitoring and analysis would be significant.

How will bird strikes be evaluated at offshore wind projects?

Which bird species (ex Brown Pelicans and Gannets) are at risk from offshore wind projects?

Will offshore wind projects exclude wintering migratory sea ducks and other birds from traditional feeding habitats?

The last three questions deal primarily with offshore wind projects, and need to be addressed to the Minerals Management Service Environmental Studies Program, as they gear up for environmental studies in conjunction with leasing offshore areas for wind projects.

All of these unanswered questions have been posed to the National Renewable Energy Laboratory of the Department of Energy and to the Minerals Management Service. At the current time there is no adequate budget to answer these or other questions, but wind projects are going forward at an increasing rate without answers to these questions, and

without adequate involvement of the Fish and Wildlife Service for development of enforceable guidelines for preventing or minimizing bird kills and habitat losses.

Biological Significance of wind turbine mortality.

While the actual number of birds killed by wind turbines is unknown, estimates have been made in the range of 30,000 to 60,000 per year at the current level of wind development. The wind industry is prepared to increase the number of turbines 30 fold over the next 20 years, in order to fulfill the President's request that renewable energy projects supply 20% of the nation's energy needs by 2030.

At the current estimated mortality rate, the wind industry will be killing 900,000 to 1.8 million birds per year. While this number is a relatively small percentage of the total number of birds estimated to live in North America many of the bird species being killed are already declining for other reasons, and losses of more than a million birds per year would exacerbate these unexplained declines. Data from the FWS Migratory Bird Management and Breeding Bird Survey by the US Geological Service indicate that at least 223 species of our native bird species are in significant decline (about 1/4 of all species in US). The mortality at wind farms is significant, because many of the species most impacted are already in decline, and all sources of mortality contribute to the continuing decline.

Thank you once again for the opportunity to present my testimony today Chairman Bordallo.