



Scientific Integrity and Transparency in Bird Mortality Data From Wind Energy Development

Michael Hutchins, Ph.D.
Director, Bird-Smart Wind Energy Campaign

Wind Power as “Clean” Energy



Our world is hungry for energy

Wind power is “clean, renewable” energy

People are concerned about climate change

Wind energy companies have done a good job of selling themselves as “green”

Wind Energy and Bird Kill



Wind turbines kill at minimum hundreds of thousands of birds and bats annually in the U.S. and can impact other wildlife

Direct strikes of blades, moving up to 150 miles per hour

In the case of fragile bats, barotrauma can also kill

Wind Energy and Bird Kill



Smallwood/¹: est. 573,000 birds and 888,000 bats lost annually at 2012 build-out levels

Loss et al./²: est. 239,000 lost annually, with 1.4 million+ birds being lost annually by 2030

Erickson et al./³ est. that 214,000-368,000 songbirds lost annually

1/Smallwood, K.S.. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin 37: 19-33.

2/Loss, S.R., Will, T. and Marra, P. 2013. Estimates of bird collision mortality at wind facilities in the contiguous United States. Biological Conservation 168:201-209.

3/3/ Erickson, W.P. et al. (2014) A comprehensive analysis of small passerine fatalities from collision with turbines at wind energy facilities. Plos One
<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0107491>

Wind Energy and Bird Kill

Table 1. Estimated number of bird mortalities per year using mortalities per turbine from Loss et al. (2013) and Smallwood (2013) for currently built, proposed and future turbines estimated from the Department of Energy projections for 3 scenarios: business as usual (BAS), DOE modeled (WV), and high fuel cost low wind cost (HFLW).

Scenario	N turbines	Bird mortalities per turbine	
		Loss et al. 2013 (5.25 ± 2.1)	Smallwood 2013 (14.1 ± 2.6)
Built (as of Jan. 2015)	49,694	260,894 $\pm$ 104,357	700,685 $\pm$ 129,204
Proposed as of Jan. 2015	97,075	509,644 $\pm$ 203,858	1,368,758 $\pm$ 252,395
2020 BAS projection	66,507	349,161 $\pm$ 139,665	937,749 $\pm$ 172,918
2030 BAS projection	92,231	484,212 $\pm$ 193,685	1,300,457 $\pm$ 239,801
2050 BAS projection	222,110	1,166,078 $\pm$ 466,431	3,131,751 $\pm$ 577,486
2020 WV projection	92,231	484,212 $\pm$ 193,685	1,300,457 $\pm$ 239,801
2030 WV projection	177,587	932,332 $\pm$ 372,933	2,503,977 $\pm$ 461,726
2050 WV projection	311,564	1,635,711 $\pm$ 654,284	4,393,052 $\pm$ 810,066
2020 HFLW projection	92,231	484,212 $\pm$ 193,685	1,300,457 $\pm$ 239,801
2030 HFLW projection	213,465	1,120,691 $\pm$ 448,277	3,009,857 $\pm$ 555,009
2050 HFLW projection	360,423	1,892,221 $\pm$ 756,888	5,081,964 $\pm$ 937,100

Wind Energy and Bird Kill



Estimates do not include birds killed at associated transmission lines and towers, which Loss et al. (2014) estimated at 12-64 million annually¹

1/Loss, S.R., Will, T., and Marra, P.P. 2015. Refining estimates of bird collision and electrocution mortality at power lines in the United States. PLoS ONE 9(7): e101565. doi:10.1371/journal.pone.0101565.

Habitat Impacts



Impacts of turbines does not include:

Land clearing

Road building

Stress and disruption associated with tall structures.

Importance of Proper Siting



Proper siting and curtailment are the only proven forms of mitigation for reducing bird kill/¹

Areas to be avoided include major migratory routes, key breeding habitats and sensitive ecological areas, such as wetlands

¹/Arnett, E.B. and May, R.F. 2016. Mitigating wind energy impacts on wildlife: Approaches for multiple taxa. Human-Wildlife Interactions 19: 28-41.

Problem: Pre-construction Risk Assessments



Pre-construction risk assessments informing the siting of wind energy projects are conducted by paid consultants to the wind industry

They often downplay impacts, on birds and bats, include errors of omission and seldom, if ever, recommend against building, even in areas with high concentrations of birds or bats

Problem: Post-construction Mortality Studies

PacifiCorp sues to block release of bird-death data at wind farms



PacifiCorp owns or buys the power from 13 wind farms across three states, just south of Arlington. (The Oregonian/Olivia Bucks)

AP

By The Associated Press
Follow on Twitter

on November 17, 2014 at 9:54 AM, updated November 17, 2014 at 9:54 AM

Business Events

[See All Events »](#)

[Submit Your Events »](#)



Brian Zwiebel photo provided by Black Swamp Bird Observatory

1 / 1 A golden-winged warbler, a bird with a declining population that has been killed by an Ohio wind farm that has sued two state agencies.



Wind farm sues to block bird death data release

TOM JACKSON • UPDATED JUN 24, 2016 AT 3:24 PM

tomjackson@sanduskyregister.com

OAK HARBOR — An Ohio wind farm has filed a lawsuit against two state agencies, hoping to conceal the number of bird deaths that are being caused by its operation.

Except in Hawaii, FWS relies exclusively on industry self-reporting of bird and bat fatalities—a direct conflict of interest

FWS and wind developers have been treating bird kill data at specific wind energy sites as proprietary information

Reliance on voluntary self-reporting virtually ensures that bird and bat kill data will be underreported

Problems with the Current Regulatory System



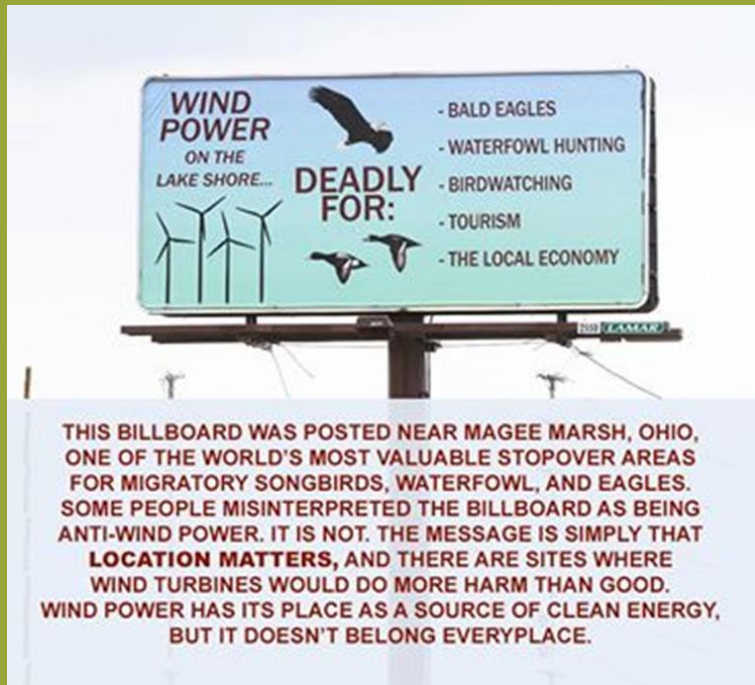
- Lack of Scientific Integrity/Credibility
- Lack of Independence/Standardization in Data Collection
- We don't really know how many and what type of birds and bats are being killed
- Without such data, how can we:
 - Assess the accuracy of pre-construction risk studies in determining risks?
 - Assess the effectiveness of mitigation?
 - Determine the appropriateness of compensation?

Solutions



- Make applying for ITPs mandatory when protected species are present.
- Wind companies already pay for (non-independent) pre-construction risk and post-construction mortality studies.
- Put money in a fund. Let FWS hire independent, third-party experts to do the work using standardized methods.
- Make all mortality data available to the public and concerned conservation organizations.
- Enforce our wildlife protection laws, including NEPA, ESA, BGEPA and MBTA.

Thank You!



Leon Levy Foundation, Kleberg Foundation and other donors for their generous support of ABC's Bird-Smart Wind Energy Campaign

Kenn and Kimberly Kaufman and the Black Swamp Bird Observatory

ABC Bird-Smart Wind Energy Partners



**AMERICAN BIRD
CONSERVANCY**