

# Wind Industry Neglecting Bats

By Merlin Tuttle

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The early promise of clean, renewable energy from wind seemed like a no-brainer, and leading environmental and conservation groups enthusiastically promoted it as an ideal alternative to fossil fuel. Discoveries of an occasional dead bird or bat were viewed as a small price to pay. But over the next decade, it was gradually realized that we'd noticed only the tip of a proverbial iceberg.

Most killed bats had remained undiscovered. They were difficult to find after falling into vegetation and rough terrain. Furthermore, scavengers were removing up to 70% of dead bats within the first 24 hours, dramatically reducing numbers found in searches conducted at two- to four-week intervals.<sup>1</sup> By the time we became aware of extensive bat kills, huge commitments had been made to an industry widely viewed as all green.



([https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG\\_4933.jpg](https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG_4933.jpg))

Environmental consultant, Jessica Kern, examining red, hoary and tri-colored bats killed by wind turbines in West Virginia. She was one of the first to

notice that thousands of bats were being killed  
unnoticed and unreported.



(<https://www.merlintuttle.org/wp-content/uploads/2014/11/Picture10.jpg>)

Ed Arnett, the founding director of the Bats and Wind Energy Cooperative, inspecting an area below a wind turbine where searchers had reported no bats were killed. without admitting it would have been impossible to find dead bats.



([https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG\\_4981.jpg](https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG_4981.jpg))

Ed Arnett, relying on his trained retrievers, found that human searchers were unable to find most of the killed bats. However, such dogs are seldom employed, and many companies seem to favor consultants known for finding the fewest bats.



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Even when large bats, like this hoary bat, are in plain sight, they can be difficult to see. This freshly killed bat is just left of center.

By 2002, it was clear that potentially serious problems were being overlooked, leading me to propose a collaborative investigation. The Bats and Wind Energy Cooperative was formed in 2003 as a partnership between bat conservationists, industry, leading scientists, and government agencies.<sup>1</sup> We confirmed serious problems, but also made unprecedented progress in finding solutions.<sup>2,3</sup>

Scientifically credible search protocols and statistical analyses were developed<sup>4,5,6</sup> and within just a few seasons



(<https://www.merlintuttle.org/wp-content/uploads/2014/11/0011859ED2.jpg>)

Merlin Tuttle hosting the meeting at which industry and government leaders agreed to his invitation to form the Bats and Wind Energy Collaborative, a group that made outstanding progress in jointly funding leading scientists to develop credible monitoring methodology as well as remedies for preventing bat kills. Though some companies enthusiastically cooperated, a majority refused to implement recommended actions. Following Merlin's retirement, and Ed Arnett's departure, progress in organizing a collaborating committee of industry and conservation leaders to fairly rank companies on a "green scale" was unfortunately abandoned, leading to disappointing progress.

economic costs of needlessly pushing species into endangered status are being ignored.

of collaboration, it was discovered that by a simple raising of turbine cut-in speeds (the wind speeds at which turbine rotation was activated) mortality could be reduced by 77% over a fall season of 75 nights at a cost of only 1 percent of total annual output.<sup>7</sup> Multiple studies concurred,<sup>7,8,9</sup> and refinements were developed that could make bat protection even more cost-effective.<sup>10,11</sup>

However, both government and industry have largely ignored these findings, and there is still little or no guidance on tolerable mortality limits. In most cases, the only mitigation is on behalf of already listed endangered species (negotiated through Incidental Take Permits under Section 10 of the Endangered Species Act). Incidental Take Permits simply set arbitrary limits for the number of bats that can be accidentally killed without a company being cited for a violation of the Endangered Species Act. When these numbers are exceeded, companies often request, and are simply granted increased limits. The environmental and

Ecological impact assessments continue to be required, at considerable expense, though they are known to be ineffective. Their sole value is to give the perception of rigorous safeguarding of environmental standards.<sup>12</sup> Pre-construction surveys have consistently underestimated actual post-construction mortality. At a Gulf Coast location in Texas, kill rates for bats, mostly Brazilian free-tailed bats (*Tadarida brasiliensis*) were six times higher than predicted,<sup>13</sup> despite being more than 150 miles from the nearest major roost. Turbines in Hawaii are killing endangered hoary bats three times faster than predicted,<sup>14</sup> and I am unaware of an installation anywhere that has not substantially exceeded predicted kills.



([https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG\\_4741ED2.jpg](https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG_4741ED2.jpg))

Ed Arnett recording a killed tri-colored bat found by his trained retriever.

Management and permitting agreements are often left to the discretion of local entities who have little or no experience in wildlife or other environmental issues, though their decisions can have far reaching national and international consequences.<sup>8,10</sup> Further complicating matters, there remains a paucity of credible science to document population sizes or forecast long-term mortality impacts,<sup>15</sup> too often leaving costly litigation as the only option for resolving controversy.

Proactive companies who have provided funds and taken risks to help scientists conduct the research required to solve problems are inadequately rewarded, and an unfortunately large number of others have gained an economic advantage by failing to implement even the simplest, most cost-effective mitigation recommendations, for example feathering blades at low wind speeds.

Much of the killing of bats at wind turbines was widely believed to have ended in 2015. With great fanfare, the American Wind Energy Association (AWEA), a trade group, announced voluntary guidelines to increase turbine cut-in speeds sufficiently to reduce bat kills by 30%, ignoring the fact that a slightly larger increase could have doubled or tripled the number of bats saved, still with minimal economic burden. Nevertheless, even the proposed "voluntary" amount appears to have been ignored by a large proportion of companies, rendering the announcement little more than a public relations gimmick.<sup>16</sup> In the U.S., the Fish and Wildlife Service can intervene only when it has proof that a federally

listed endangered species has been killed. Finally, at projected industry growth rates, even full policy implementation would soon have become inadequate. The cost of resolving this problem is trivial compared to that of continued neglect.



([https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG\\_5066.jpg](https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG_5066.jpg))

A fairly typical wind energy site in Pennsylvania, where killed bats seldom could be found unless they fell in the access road and were missed by scavengers who often arrived prior to human searchers.

Wind power is now the largest cause of mass mortality for bats worldwide. The cumulative impact has become an international environmental crisis that cannot be ignored.<sup>17</sup> By 2012, more than 600,000 bats were already being killed annually in the U.S. alone, and the number grows each year.<sup>18</sup>

Education at many levels is urgently needed and could benefit both bats and proactive companies by avoiding serious environmental harm and costly confrontation. At current rates of wind industry expansion and resulting bat mortality, additional species almost certainly will be driven into endangered status<sup>15</sup>. This risks a backlash from traditional environmentalist supporters of wind, not to mention the cost of increased endangered species mitigation and litigation. I agree with Brandon Keim<sup>19</sup> who asks "how people already know so much about solving the problem, yet do so little." To neglect such an important issue for so long is a sad commentary on both the supposedly green wind industry and the world's leading conservation organizations.

Though communication with landowners and decision makers can be extremely important, nothing is likely to prove more immediately effective than simple provision of clear industry incentives. It's time to demonstrate real concern for our environmental future.

One possible approach to avoiding public demands for heavy-handed government regulation is for conservation and industry leaders to cooperate in developing criteria by which companies can be objectively ranked relative to their collaboration in preventing or mitigating harm to bats and other wildlife.

These rankings could be used to help green energy investment advisers guide their clients, many of whom

seriously care about the environment. Even investors whose only concern is avoidance of costly delays and litigation would have incentive to cooperate. Such an approach need not require perfection in order to serve as an important first step in the right direction, though fair-minded implementation would be essential.

Criteria could include the extent to which a company avoids high-risk locations, incorporates approved mitigation techniques, and collaborates with scientists to monitor and report mortality and find solutions.



([https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG\\_4568.jpg](https://www.merlintuttle.org/wp-content/uploads/2014/11/IMG_4568.jpg))

A West Virginia site where thousands of bats were killed annually with no remedial action taken by owners. A major conservation organization continued to publicize its purchase of "green energy" from this facility long after the site's impact in killing bats had been disclosed.

Finally, in discussing how to meet energy needs, we must keep in mind that energy conservation is the single most important step we can take toward independence. The U.S. Department of Energy<sup>20</sup> reports that by using simple in-home procedures, Americans could cut their annual energy bills by 25 percent without reducing their standard of living.

## **Read Wind Energy: Key Planning Issues (<https://www.merlintuttle.org/resources-2/wind-energy-development-concerns/>)**

## **Read Wildlife and Wind Farms: Conflicts and Solutions (<https://www.merlintuttle.org/2018/01/08/wildlife-wind-farms-conflicts-solutions-book-review/>)**

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## WHAT IS MTBC?

Merlin Tuttle's Bat Conservation is the most recent contribution by Merlin Tuttle to the world of bats. With over 60 years of in-depth knowledge and experience Merlin Tuttle, renowned bat expert, educator and wildlife photographer founded MTBC with one true goal in mind; teaching the world to understand and appreciate the vital contributions bats make to human beings and the world we live in.

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