

Bats and Wind Energy:

Problems, Challenges, and the Search for Solutions

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BAT CONSERVATION
INTERNATIONAL
www.batcon.org

Bat Conservation

International Position:

We support development of clean, renewable energy sources, believe that wildlife kills can be prevented or minimized, and advocate broad collaboration to find solutions.

The Problem:

Bats are killed in potentially unsustainable numbers at wind power facilities, especially along wooded ridges, but also in Canadian prairies, Midwestern farmlands, and in mixed habitats of the Southwest, areas where tens of thousands of additional turbines are planned.

The Challenge:

Develop technologies or operational approaches that solve the problem or learn how to avoid sensitive locations.

Consequences of Failure:

- Threaten Green Image of Wind Power and Ecosystem Health
- Create New Endangered Species and Unnecessary Environmental Costs and Conflict

Finding Solutions: Forming Bats and Wind Energy Cooperative



- Unexpectedly high bat kills discovered at the Mountaineer Wind Energy Center in West Virginia in summer 2003 stimulated a call for action.

- BCI hosted key players from AWEA, NREL, USFWS, and FPL Energy in Austin, TX in December 2003.

Discussed issues and strategies; determined the need for a meeting of experts and development of a "cooperative" research effort.



Expert Leadership:



- BCI and USFWS organized an “experts meeting” held in Juno Beach Florida in February 2004, hosted by FPL Energy.

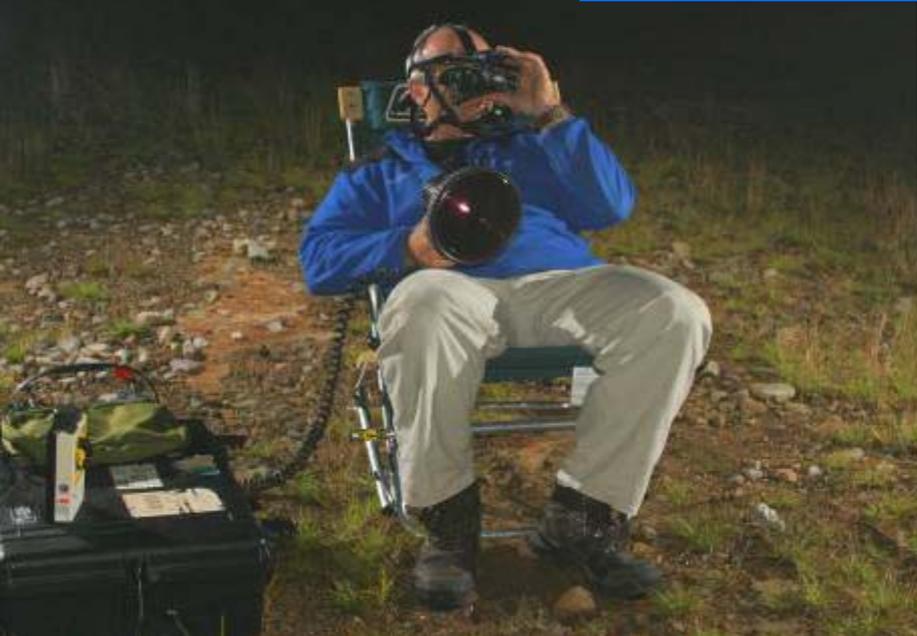
Discussed existing data, problems and possible causes, identified knowledge gaps, and developed priorities for research.

- Hired Ed Arnett as a Conservation Scientist with BCI to serve as Program Coordinator for the Bats and Wind Energy Cooperative in May 2004.

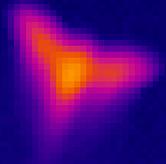




Top Science Team & Technology

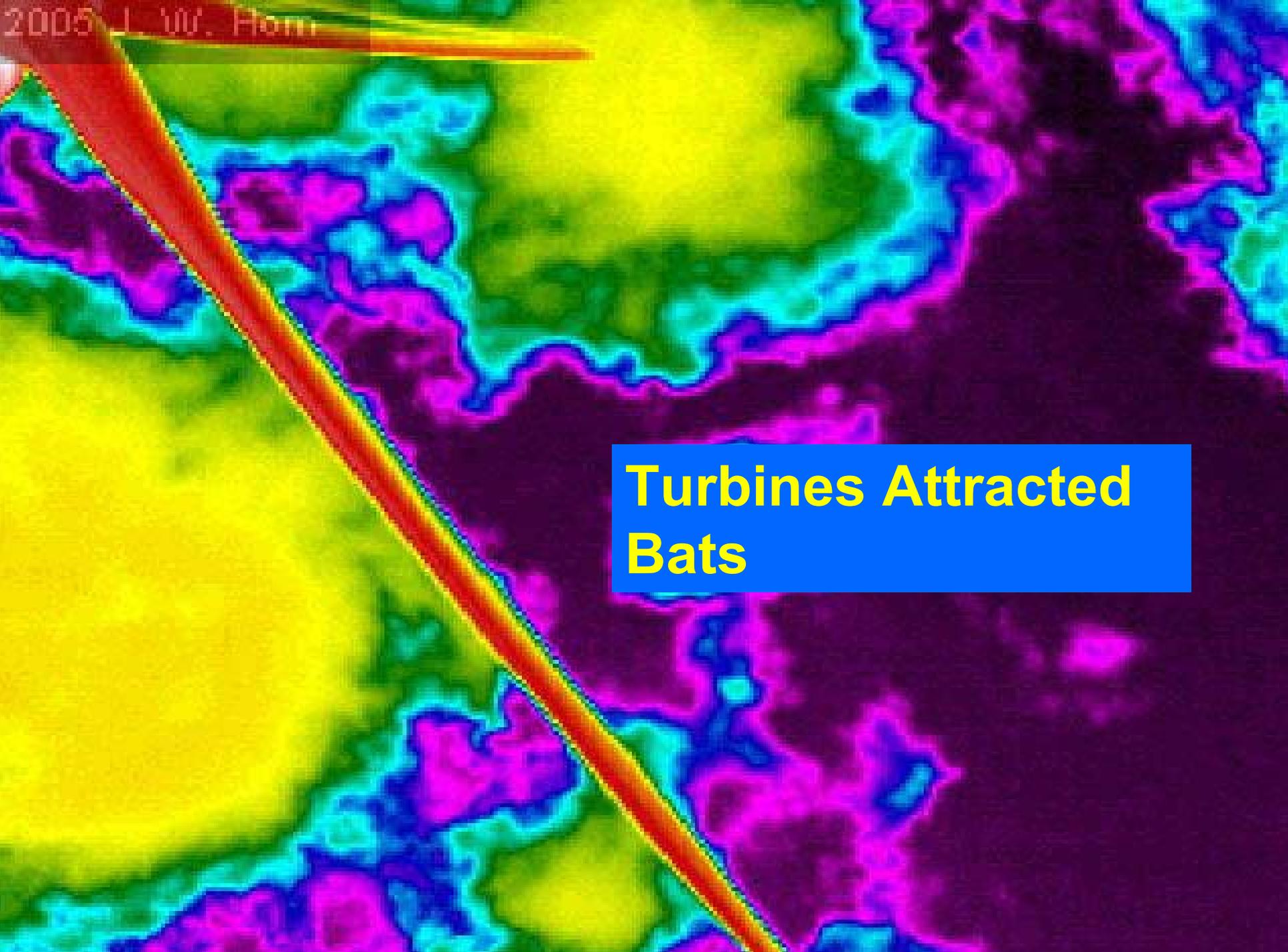


Findings of 2004 Research





**Most kills
occurred during
low wind, none
at feathered
turbines.**



**Turbines Attracted
Bats**



56-75% of Bats Missed by Searchers





Scavengers Removed Up to 80% of Fresh Kills in 3 Days





**Reported Search Intervals, 7-30
Days, Mostly 14**



7 Days after Kill





Bat Kills Strongly Associated with Forest





Most Vulnerable Species



Key Issues

Inadequate site access and funding

Building in High Risk Locations
Prior to Finding Solutions to Avoid
or Minimize Risks

No Data to Measure Population
Impacts

Inadequate Jurisdiction in
Permitting

Why be concerned about bat kills at wind turbines?

Massive expansion of wind turbine use anticipated (155,000+ by 2020), especially along wooded ridge tops in eastern U.S

Bats already in decline though essential to ecosystem health

Must consider cumulative impacts

Can species already in decline
sustain high rates of additive
mortality?





Eastern red bats already reported declining in Mid-West (*Whitaker et al. 2002, Carter et al. 2003, Winhold et al. 2005*).

Migrations of "great flocks" reported passing over for days at a time in 1870s... (Mearns 1889).

Anticipate approximately 50,000 bats killed/1,000 turbines installed on wooded ridges of Eastern U.S. unless preventive solution is found



Finding Incentives

At some point, the investment community will take a much clearer position on what they believe constitutes "green energy," and that no doubt will involve solving wildlife kills.

Need to develop incentives for proactive companies to provide access and support for research needed to solve problems.

Consensus Among Scientists and Conservationists

"The undersigned groups support the development of clean, renewable energy sources. Minimizing and mitigating the harmful impacts to wildlife is an important element of "green energy." Developers of green energy sources should cooperate with independent scientists and natural resource agency specialists in developing and testing methods to minimize harm to wildlife. Investors should encourage this cooperation by investing in companies that support this research in all ways."

Organizations Initially Supporting Investment Incentives

Bat Conservation International

Defenders of Wildlife

The Society for Conservation Biology

National Council for Science and the
Environment

The Ornithological Council

The Wildlife Society

Washington Audubon

Conclusions

Crisis Pending if Solutions not Found Soon

Solutions Feasible with Strong Collaboration

Cooperation Benefits All Concerned

Access Essential to Progress