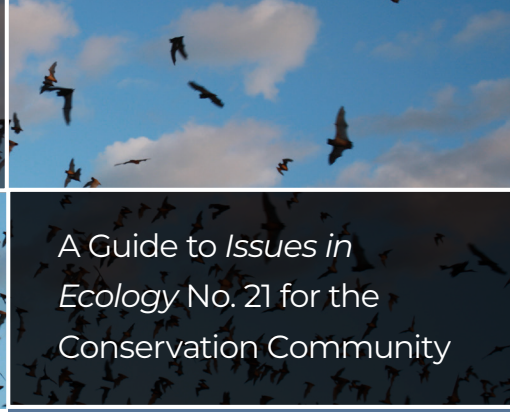


# IMPACTS TO WILDLIFE OF WIND ENERGY SITING AND OPERATION IN THE U.S.



A Guide to *Issues in Ecology* No. 21 for the Conservation Community

## What is this report about?

Wind energy is a renewable energy source that contributes to reducing our dependence on carbon emitting fossil fuels. Like all sources of energy, however, wind energy facilities have impacts on the ecosystems where they are sited. Risks from land-based wind energy include collision fatalities for birds and bats and the potential for impacts to species' habitat. Certain species, such as raptors and migratory tree bats, may be at-risk of population-level effects. Responsibly sited and operated wind energy facilities have a very low environmental impact, but more research is needed to better inform decision-making.

This peer-reviewed report combines the expertise of 13 scientists from industry, state and federal government, academia, and conservation organizations. The report provides the following points: summaries of what we know about the potential risks to wildlife associated with wind energy; current tactics to reduce these risks; and knowledge gaps that call for further research.

## What is being done?

Some technologies and strategies that may reduce collision risk are being implemented at wind farms, while others require further research and development. These tactics include siting, curtailment, and deterrence. 1) Siting - building wind farms or turbines in areas away from potential at-risk species; 2) Curtailment - shutting down turbines under certain conditions to reduce collision risk; 3) Deterrence - discouraging certain species from coming too close to wind turbines (using sound or lights).

## What does the report recommend?

The report recommends additional research to fill the knowledge gaps needed to minimize adverse ecological impacts of wind energy facilities. This includes replication of studies and coordinated research across sites; continued research on risk assessment, facility siting, and high-risk species population dynamics; and, continued work on technologies and strategies that may reduce collision risk.

## What can I do?

- **Share** this report with colleagues and use it as a resource on wind energy and its impacts to wildlife
- **Support** further research and science-based decision-making
- **Stay informed** on new resources and **engage** with the wind-wildlife energy community



Read the *Issue*:  
[esa.org/  
publications/issues](http://esa.org/publications/issues)



## Opportunities to Collaborate

### American Wind and Wildlife Institute

Cross-sector collaboration and independent research on wind energy and wildlife.



[awwi.org](http://awwi.org)

### Bats and Wind Energy Cooperation

Collaborative research effort focused on reducing risk to bats from wind energy.



[batsandwind.org](http://batsandwind.org)

### National Wind Coordinating Collaborative

Stakeholder forum on wind energy and wildlife, including a monthly newsletter and regular webinars.



[nationalwind.org](http://nationalwind.org)

### Wind Wildlife Research Fund

Wind industry-led initiative for expedited, applied wind-wildlife research.



[awwi.org/wind-wildlife-research-fund/](http://awwi.org/wind-wildlife-research-fund/)