

Welcome to the NWCC Wildlife Workgroup Call

July 13, 2011

2:00 – 3:30pm ET

Housekeeping Items:

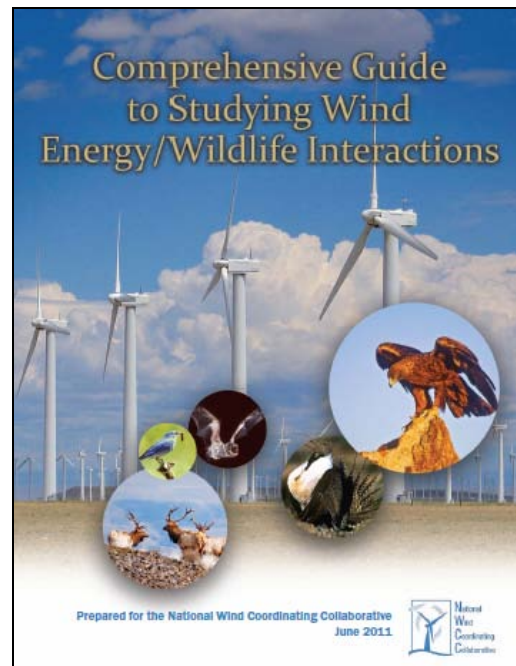
- Please **mute your computer speakers** to prevent an echo on the conference call line.
- Also, if you are not speaking, please **mute your telephone line**. If you cannot do this on your phone, you can push * 6 to mute your conference call line.

Call Agenda

- Briefing on the *Comprehensive Guide to Studying Wind Energy/Wildlife Interactions*
 - General Introduction
 - Background on the Guide
 - Overview of the Guide
 - Q&A
- Sector Updates
 - Update from FWS on the *Draft Land-Based Wind Energy Guidelines* and *Draft Eagle Conservation Plan Guidance*
 - Other Updates

Briefing:

Comprehensive Guide to Studying Wind Energy/Wildlife Interactions



NWCC Background

The mission of the NWCC Wildlife Workgroup is to identify, define, discuss, and through broad stakeholder involvement and collaboration address wind-wildlife and wind-habitat interaction issues to promote the shared objective of developing commercial markets for wind power in the United States.

Recent NWCC Publications

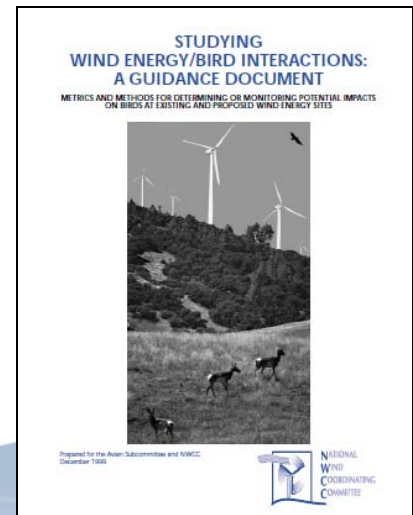
- 2011: ***Comprehensive Guide to Studying Wind Energy/Wildlife Interactions***
- 2011: Wind Wildlife Research Meeting VIII Proceedings
- 2010: Wind Turbine Interactions with Birds, Bats, and their Habitats: A Summary of Research Results and Priority Questions (aka the Birds and Bats Fact Sheet)

NWCC Resource Document

- Resource documents are for educational and informational purposes.
- They are reviewed and approved by an NWCC working group with relevant experience; but, by choice of the NWCC, they are not carried through the full NWCC consensus process.
- Publication does not presume that all Members have reviewed the content of the document.

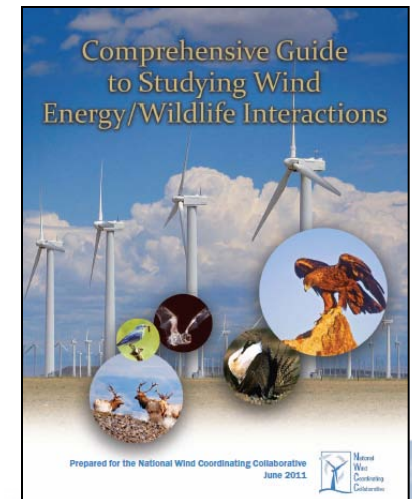
Anderson et al. (1999)

- *Studying Wind Energy/Bird Interactions: A Guidance Document*
- To maximize the knowledge gained from the emerging study of wind energy/wildlife interactions
- Need for common basis for assessing potential impacts
- Focused on avian activity and use of wind farm habitats by birds
- Intended to be an exhaustive review of latest research



Why Update the Guide?

- Updated information
 - New technologies and techniques
 - Diurnal species at land-based wind facilities
 - Broadens the focus to include bats



Development Process

- Competitive bid for technical subcontractor
- Review Criteria:
 - 20% - a high level of objectivity demonstrating a balanced viewpoint
 - 30% - quality of the proposed approach including thoroughness, creativity, clarity, and project implementation and management plans
 - 30% - strong credibility of team, comprised of multiple technical experts with credibility among a diverse group of key stakeholders, based on experience and capabilities
 - 20% - cost

Development Process

- Submission review committee reviewed proposals and provided recommendations to the Wildlife Workgroup.
- The Wildlife Workgroup recommended the preferred team to NREL.
- NREL issued a subcontract to the preferred team.

Internal Review Process

Writing Team

- Dale Strickland (WEST, Inc.)
- Wally Erickson (WEST, Inc.)
- William Warren-Hicks (EcoStat, Inc)
- Michael Morrison (Texas A&M)
- Doug Johnson (USGS)
- Ed Arnett (BCI)
- Jill Shaffer (USGS)
- Greg Johnson (WEST)

Internal Review Team

- Wayne Walker (Conservation Consulting)
- Rob Manes (TNC)
- Michael Green (USFWS)
- Stacy Librandi-Mumma (Pennsylvania Game Commission)

NREL Review Process

- The team submitted a draft to NREL.
- The draft was then reviewed by four anonymous peer reviewers selected by NREL.
- The WEST team addressed all comments from the anonymous review and produced a new draft.

NWCC Review Process

- The new draft was distributed to the Wildlife Workgroup Core Group for comments.
- AWEA submitted comments on the draft.
- The writing team responded to all comments.
- The response to comments along with the document were distributed for one final round of comments by the Core Group.
- NREL, with approval from DOE, provided additional funding to support integration of these additional comments.
- The writing team finalized the document based on these comments.

Wildlife Workgroup Core Group

Thank you to the Wildlife Workgroup Core Group for their support of the development and review of the document.

John Anderson, Rene Braud, Christina Calabrese, Ashley Conrad-Saydah, Noel Cutright, David De Caro, Aimee Delach, Edgar DeMeo, Jeff Deyette, Kelly Fuller, Patrick Gilman, Michael Green, Celia Greenman, Eric Jensen, Christy Johnson-Hughes, Caroline Kennedy, Jim Lindsay, Rob Manes, Albert Manville, Rich Piper, Jay Pruett, Rich Rayhill, Andrew Robinson, John Rogers, Jerry Roppe, Karin Sinclair, Linda Spiegel, Tina Taylor, Genevieve Thompson, Robert Thresher, Rafael Villegas-Patraca, Tom Vinson, Allison Vogt

Purpose of “The Guide”

- Reference document used to:
 - Assess potential impacts of a proposed wind facility to wildlife
 - Identify potential approaches to avoid, minimize or offset adverse impacts
 - Evaluate actual effects of wind energy technology on wildlife and evaluate effectiveness of approaches used to avoid, minimize, or offset adverse impacts
 - Support the decisions
- Comparable Data
- Information to reduce potential risk to wildlife in existing and future facilities

Table of Contents

- **Chapter 1: Introduction**
 - Introduction
 - Purpose and Scope
 - Historical Perspective
 - Review of Wind Energy Facility Hazards to Wildlife
 - Organization of Document

- **Chapter 2: Preliminary Site Screening and Site Evaluation**

- Preliminary Screening of Sites
- Site Evaluation
- Documentation
- Case Study – A Site Characterization Study
- Summary
- Decision Process

- **Chapter 3: Baseline Studies and Predictive Models**
 - Introduction
 - Problem Formulation
 - Estimating Abundance and Habitat Use of Birds, Bats and Other Wildlife of Concern
 - Summary
 - Decision Process

- **Chapter 4: Post Construction Fatality Studies**
 - Introduction
 - Problem Formulation
 - Summary
 - Study design
 - Fatality estimators
 - Decision Process

- **Chapter 5: Other post-construction studies**

- Introduction

- Problem Formulation

- Design Considerations for Post-Construction Studies

- Impact and Risk Assessment – individuals and populations

- Risk Reduction

- Mitigation Evaluation

- Adaptive Management

- Summary

- Decision Process

- **Appendix A – Assessing Impacts of Wind-Energy Development on Nocturnally Active Birds and Bats: A Guidance Document**

Published in Journal of Wildlife Management in 2007

Primary objectives:

- Assess potential impacts on nocturnally active resident and migratory species
- Fatality rates and causes
- Assess and implement methods for reducing risks to bird and bat populations and their habitats.

- **Appendix B – Risk Framework**
 - Introduction
 - General Framework Description
 - Hypothetical Case Study Illustrating Risk Framework

- **Appendix C – Statistical Considerations: Study Design and Data Analysis – An update of Anderson et al. (1999)**

- Introduction
- The Philosophy of Study Design
- Design/Data-Based Studies
- Improving the Reliability of Study Designs
- Data Analysis
- Summary and Conclusion
- Experiments

- Recommendations for Study Design

Questions?

- If you have a question, please raise your hand on the webcast.
- We will take as many questions as we can in the time allowed.
- If your question is not answered, please email it to lflinn@RESOLV.org, and we will do our best to get an answer for you.

Thank you!

- Citation

- Strickland, M.D., E.B. Arnett, W.P. Erickson, D.H. Johnson, G.D. Johnson, M.L., Morrison, J.A. Shaffer, and W. Warren-Hicks. 2011. Comprehensive Guide to Studying Wind Energy/Wildlife Interactions. Prepared for the National Wind Coordinating Collaborative, Washington, D.C., USA.

Sector Updates

- Updates from FWS on the
 - *Draft Land-Based Wind Energy Guidelines*
 - *Draft Eagle Conservation Plan Guidance*
- Others?