BCI’s Perspective of Tiers 3 & 4

- USFWS Land-based Wind Energy Guidelines Workshop
  - 17–20 September 2012
Bat Conservation International

- BCI founded in 1982 (30 yrs!)

- BCI’s Mission: to conserve the world’s bats and their ecosystems to ensure a healthy planet

- BCI recognizes the impacts of both human infrastructure (e.g., wind turbines) and climate change to bat populations
Bats & Wind Energy Cooperative

- Organized by BCI, AWEA, NREL, USFWS in December 2003 (recently added DOE and USGS)

- An alliance of state and federal agencies, private industry, academic institutions, and non-governmental organizations that cooperates to develop solutions to reduce to the greatest extent practicable or, where possible, prevent mortality of bats at wind power turbines

[www.batsandwind.org](http://www.batsandwind.org)
BWEC Accomplishments

~45 Funding partners (industry, state & federal agencies, NGO’s, clean state funds, & private foundations & donors)

Generated >$4.5 million (2004–June 2011)

Completed 10 pre-construction acoustic & 5 post-construction fatality studies (1 pre-con & 4 post-con projects in 2012)

6 Refereed journal articles & 14 peer-reviewed reports

>75 Presentations (conferences, workshops, seminars, etc.)

Hosted 3rd BWEC Science Meeting (Jan 2012)

www.batsandwind.org
Tier 3: Pre-con (Acoustic Studies)

- Investigate ability to predict risk
- Examine spatial & temporal activity patterns & conditions when bats are most active
Tier 3: Recommendations

- 1 year (most cases)
- Spring-Fall (most cases)
- Number of sampling stations
- Multiple heights
- Detector type, software & analysis will vary based on the objective
- 3rd-party peer-review
- Dissemination
Tier 4 Studies: Post-construction

- Estimate fatality rates
- Examine spatial & temporal fatality patterns & conditions when bats are most vulnerable
Tier 4: Recommendations

- 1 year (most cases)
- Spring-Fall (most cases)
- Bias trials (SE, CR)
- Sampling intensity
- Estimators
- 3rd-party peer-review
- Dissemination
Pre-/Post-Con Relationship

• Analyzing pre-/post-con relationship is difficult
• Confounding factors
• Problems with data
• Conflicting reports on relationship between post-con activity & fatality
Operational Mitigation


Raising cut-in speed significantly reduces bat fatalities!

Conduct replicate studies

Feathering up to cut-in

Incorporate other variables
Acoustic Deterrents

Arnett et al. 2012

Observed an effect, but not as conclusive

Create a more robust device
Develop a blade-mounted device
Continue field tests
Compare costs
Behavioral Studies

• Are bats attracted to turbines

• If so, why
  – Multiple attractants
  – Species specific attractants

• Will help fine tune mitigation

• Money from non-industry sources, but still need industry cooperation (i.e., site access)
Questions?

Bats & Wind Energy Cooperative (www.batsandwind.org)

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