

**Developing State-wide Avian Guidelines
Docket Number 06-OII-1**

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Comments provided by:

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I attended the C. E. C. workshop on developing monitoring guidelines for bats and birds in Sacramento on 29 Aug 2006. I have studied bats for 10 years and specialize in evaluating survey methods used for their detection. I was impressed by the C.E.C.'s comprehensive knowledge on the subject of monitoring wildlife at wind energy facilities, the parties they had brought together for the workshop, and the conduct of the workshop itself. There were many substantive discussions there that will contribute to C.E. C. drafting guidelines for monitoring impacts to wildlife. I wish to express a few points in writing as well. The following comments are not presented in order of importance.

Monitoring of bird/bat activity levels should be conducted prior to construction and during operation. Note that activity monitoring during operations is separate from mortality monitoring. Currently, it is unclear whether turbines will attract, repel, or have no effect on bat activity in an area. Until we measure activity levels before and after to determine correlations between the two, we will not have taken steps to better understand the problem or suggest solutions.

The most appropriate tools for monitoring bat activity levels are acoustic bat detectors and radar. Bat detectors can be configured to operate over long-periods of time (e.g. months) and are thus an appropriate and cost-effective means of monitoring activity levels. Bat detectors should be placed at height approximating the wind-swept area of turbines so as to provide the best opportunity of detecting bats that may be most directly impacted by turbines.

I reject the argument put forth in the 29 Aug 2006 hearing that mortality monitoring be conducted infrequently (e.g., every 2 weeks) unless mortalities exceed a threshold which would necessitate more frequent monitoring (e.g. daily). Information to date suggests that bat mortality events are highly episodic and carcasses decay rapidly. Thus it is likely that infrequent mortality surveys would miss low- to medium-levels of mortality that may indicate a more severe problem. If wind energy developers hope to demonstrate that their facilities do not cause high levels of mortality, the best way to do it is with a

comprehensive dataset that is beyond reproach. More frequent monitoring is the best way to obtain such a dataset.

Some daily mortality monitoring should be conducted. Daily mortality rates can be used to correct mortality estimates for turbines which are monitored less frequently. While daily monitoring of each turbine will provide the most complete picture of when, where, and, possibly, why mortalities occur, it is acceptable for only a subset of turbines to be monitored daily. This subset should be systematically or randomly selected so as to prevent bias or the suggestion of bias as to which turbines are monitored.

Carcass removal and observer variability trials should be conducted at each wind energy development to correct mortality estimates. Differences in habitat, weather, and quality of observers can vary greatly among sites and will affect scavenging rates and detection of carcasses. We heard frequently at the 29 Aug 2006 hearing that mortality rates from one site cannot be extrapolated to other sites. The same goes for carcass detection rates.

I reject the argument that monitoring mortality is of little use because we do not know the proportion of the total population impacted. The reason we cannot calculate this proportion is because the total population size for the vast majority of species is unknown. I do not dispute this fact. However, mortality due to wind facilities is a new source of mortality and contributes to cumulative effects on a species. A primary reason for monitoring mortalities is to better understand what causes them and suggest means of avoiding them. Monitoring mortality in conjunction with monitoring activity of species is the best means for understanding the causes and conditions that cause mortalities.

If you would like to discuss these points or any aspect of monitoring bats at wind energy facilities, please contact me using the information above.

Sincerely,

Ted Weller