

California Energy Commission
Dockets Office, MS-4
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DOCKET 06-011-1	
DATE	JUN 18 2007
RECD.	JUN 19 2007

June 18, 2007

Re: Comments concerning Docket No. 06-011-1 – Statewide Guidelines for Reducing Wildlife Impacts from Wind Energy Development

Greetings,

Overall the California Energy Commission's (CEC) recommended guidelines are a slight improvement to the current situation, but they largely continue the status quo of windplant monitoring in CA - which focuses primarily on impacts to raptors. However, the Guidelines are nothing to cheer about. They are fairly weak and they're voluntary.

For bats, the Guidelines contain some good and much needed provisions. These include:

- a minimum 2 year duration for a post-construction mortality study at all windplants that covers both birds and bats (but carcass searches are recommended to be conducted only once every 2 weeks - a very long interval, which mainly serves to detect larger collision victims like hawks and eagles),
- one year of pre-construction study for bats using acoustic monitoring techniques at all proposed windplants, and
- 2 years of post-construction acoustic monitoring for bats at all windplants.

For birds, sadly, the Guidelines main recommendation is that once-a-week "bird use point counts" should be conducted at all proposed windplants, with a sampling density of one point per 420 to 640 acres. This recommendation supports a technique which likely would be inadequate for anything other than large raptors, vultures and perhaps waterfowl flying over open habitats (e.g., grassland). The Guidelines essentially ignore concerns for impacts to nocturnal migrants - which likely comprise the bulk of the potential collision mortality. Unfortunately, radar and other pre-construction wildlife monitoring techniques - which can accurately estimate the number and height of nocturnal migrants - will only be done "if warranted" (p. 49). It seems unlikely that nocturnal radar research will be deemed "warranted" unless significantly large mortality events involving nocturnal migrants are discovered at one or multiple windplants.

I've detailed below a few concerns I have with some specific recommendations of or omissions to the CEC's Guidelines.

It's disappointing that these Guidelines recommend searches of wind turbines for dead birds and bats be conducted only once every 2 weeks. Although they caveat this recommendation by pointing out the need for more frequent checks to better monitor the mortality of smaller birds and bats, the CEC staff clearly were strongly influenced by the wind industry biologists - who probably knew that it would be better for their clients to resist pressure to shorten search interval than to push for using longer interval between searches (which are less costly and likely detect fewer carcasses).

It was confusing that the main section of CEC Guidelines (Chapter 5, p. 75) appears to recommend use of only bird carcasses - and not stipulate that bat carcasses also be used - in the trials needed to determine the scavenger removal rate (one of the "bias correction" factors involved with estimating total mortality based on the number of carcasses found). Scavengers

may detect bats at a different rate than birds, and they also may be more apt to be carried away or eaten whole - and thus not leave any "feather spots" (which introduces another potential problem - see below). Although the main section (Chapter 5) of the CEC's report clearly recommends only using bird carcasses in determining Scavenger Removal Rate, the "Step-by-step" section (Chapter 2, p. 17) briefly recommends that "where possible" both bird and bat carcasses should be used in "carcass removal trials".

Unfortunately, canny wind industry biologists who want the mortality estimate to be more favorable to their clients' interests can find easily exploitable "holes" in the Guidelines' recommendations and protocols.

Notably, the Guidelines don't require "planted" carcasses, which are purposefully set out to evaluate the length of time before they disappear (e.g., removal by scavenger), to be placed where the turbines are actually located. It makes no sense to put out carcasses for developing a "correction factor", which is used to more accurately estimate bird and bat mortality from the number of carcasses found, IF the researcher doesn't conduct the scavenger removal trials in the same locations (plots) where they should be searching for carcasses (e.g., within 60 meters of the wind turbines). However, incredibly, that is what some wind industry researchers have done in conducting a number of mortality studies at windplants (e.g., WEST's studies of Nine Canyon, WA; Klondike, OR; and Stateline, OR & WA [although some of Stateline's scavenger removal plots were located beneath turbines]). This probably creates a bias in favor of lowering scavenger removal rate, and thus reducing the overall mortality estimate, given that scavengers would be much more likely to frequent the turbines and their immediate vicinity (due to past success in finding a meal - i.e., a carcass which fell near turbine after colliding with blades or tower) than to uniformly roam the surrounding areas. It defies logic and shows ignorance of animal behavior to suggest that scavenging pressure (i.e., the ability of scavengers to find a dead bird or bat) would be uniform throughout a windplant's project area.

In addition, the CEC guidelines failed to address another significant concern about carcasses which are purposefully set out to measure the length of time before they disappear (e.g., removal by scavenger): if the "planted" carcass is partially scavenged but still lies within the study plot, and if the person who is monitoring the persistence of these planted carcasses (who also knows exactly where the carcass was initially placed) is able to spend unlimited time and thoroughly cover the plot to find its remains - then the carcass is considered as being NOT removed by scavengers (i.e., it is treated identically to a "planted" carcass that was untouched). Furthermore, there is no commensurate protocol included in the CEC's guidelines to measure the detectability of partially scavenged carcasses when measuring the other bias correction factor - searcher efficiency (which uses only "whole" carcasses to see what percentage are actually found by the folks who are hired to look for carcasses).

I'm concerned that the CEC's guidelines define a "small" bird as being 10 inches or less in length (from tip of tail to bill tip). There are relatively few bird carcasses found during wind turbine mortality studies which are more than 6 or 8 inches in length - the vast majority of carcasses found are much smaller than 6 inches (i.e., songbirds). However, by defining "small" to include birds as large as Blue Jays (which are 10 inches long), this gives the wind industry biologist who conducts a mortality study the ability to use relatively large bird carcasses in trials to measure "searcher efficiency" - which presumably would render them easier to detect and consequently would increase the estimate of searcher efficiency and thereby lower the overall estimate of total mortality (i.e., a higher estimate of searcher efficiency means that fewer carcasses were "missed", which results in a lower overall estimate of total collision mortality since you would be dividing the number of carcasses by a larger fraction).

Here's a simplistic example to help understand this concept:

If 100 carcasses were found and 50 out of 100 "planted" carcasses were located during "searcher efficiency" trials -then the MINIMUM estimate of overall mortality would be determined by solving for X below:

$X \text{ total birds killed} / 100 \text{ bird carcasses found} = 100 \text{ "planted" carcasses} / 50 \text{ "planted" carcasses found}$ is the same as

$X \text{ total birds killed} = 100 \text{ "planted" carcasses} * 100 \text{ bird carcasses found} / 50 \text{ "planted carcasses found};$ therefore

X = 200, the estimate of minimum number of birds actually killed by collision with windplant's turbines

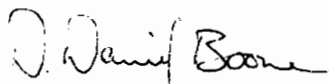
200 birds killed would be a "minimum" estimate since you also would need to include the ratio resulting from the "carcass removal trials" in the calculation of total avian collision mortality at a windplant.

If you instead determined that 75 of the 100 "planted" bird carcasses were detected by turbine searchers - a 75% efficiency rate, then solving for "X" would involve $100/.75 = 133$ (about 1/3 lower total bird mortality estimate than the 200 birds killed prediction resulting from the 50% searcher efficiency rate).

Again, the vast majority of bird carcasses found so far in mortality studies involving western (and especially eastern) windplants have been nocturnal migrant songbirds - which are mainly from 4.5 to 6.5 inches in length - and have only a fraction of the body volume of a Blue Jay. But as mentioned before, the concern in CA about wildlife impact at windplants continues to rests mainly with large raptors.

One seeming "glitch" in the Guidelines' mortality study recommendations involves bats. For wildlife mortality studies, the standard which the Guidelines recommend for determining the size of the search plot surrounding a wind turbine is that its width should be equal to the maximum rotor tip height (e.g., a 120-m tall turbine should have a search area that extends at least 60 meters from the turbine base). However, for bats, there is an odd allowance made on p. 71 - "In studies where bats are the sole focus of the search, the search radius can be smaller than for large birds and raptors." Why the search plot should be smaller for bats than the standard recommendation is unclear and seemingly contradicted by the following sentence - "Studies conducted at other wind energy facilities indicate that most bat fatalities (more than 80 percent) typically are found within half the maximum distance from the turbine tip height to the ground (Kerns et al., 2005)." Therefore, only about 80% of the bat carcasses are likely to be found within a study plot which has identical dimensions as the recommended standard (i.e., "half the maximum distance from the turbine tip height to the ground" would mean that the total width of the search plot is "equal to the maximum rotor tip height"). I hope this was a mistake, otherwise the CEC is allowing a search area for bats that is so small it likely will preclude the detection of more than 20% of the potential mortality.

Regards,



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[I'm a wildlife biologist with 30 years of professional experience – see my brief bio:
http://www.kutztown.edu/acad/geography/wildlife&windconf/about_the_speakers.htm