EDMUND G. BROWN JR.
Attorney General

State of California
DEPARTMENT OF JUSTICE

1515 CLAY STREET, 20TH FLOOR
P.O. BOX 70550
OAKLAND, CA 94612-0550

Public: (510) 622-2100
Telephone: (510) 622-2136
Facsimile: (510) 622-2270
E-Mail: tara.mueller@doj.ca.gov

March 1, 2007

Mr. Chris Bazar, Planning Director
Alameda County Planning Department
224 W. Winton Avenue, Suite 110
Hayward, CA 94544

Ms. Gina Bartlett
Scientific Review Committee Facilitator
Center for Collaborative Policy
California State University, Sacramento
160 Delmar Street
San Francisco, CA 94117

RE: Concerns Regarding the Baseline for Bird Mortality Set Forth in the Settlement Agreement Between the County, Audubon/CARE and the Wind Power Companies and the Amended Conditional Use Permits for the Altamont Pass Wind Resources Area

Dear Mr. Bazar and Ms. Bartlett:

As you know, on January 11, 2007, the Board of Supervisors approved amended conditional use permits for operation of the wind turbines at the Altamont Pass Wind Resources Area to implement the settlement agreement between the County, Golden Gate Audubon Society, Californians for Renewable Energy and the wind power companies. Based on our review of the settlement and permit conditions, we have identified two serious concerns about a key provision that affects future required reductions in bird mortality at the site. This is the baseline provision, which is critical for determining whether the 50% mortality reduction requirement – the centerpiece of the settlement and amended permits – will result in a meaningful future reduction in bird deaths. By bringing this issue to your attention, we encourage the County and the other settling parties, with the advice and assistance of the Scientific Review Committee (SRC), to clarify the matter and address it as necessary. The baseline bird mortality figure used in the settlement agreement and amended permits appears to be incorrect, and the correction factors used to determine the baseline versus those that will be used to measure any future reductions in mortality do not correspond. As explained further below, this potentially allows significantly more future bird mortality at the site than the parties appear to have intended.

Our analysis has identified two significant problems with the baseline figure in the settlement agreement and amended permits. First, the settlement and amended permits establish the baseline for bird mortality for four target raptor species (red tail hawk, golden eagle, burrowing owl and American kestrel) at the site at 1300, which was based on Table 3-11 in the August 2004 report, *Developing Methods to Reduce Bird Mortality in the Altamont Pass Wind Resources Area*, prepared by Dr. Shawn Smallwood and Carl Thelander for the California Energy Commission. (Settlement Agreement, ¶ 3(a); Permit Condition 2(a).) However, the 1300 figure is incorrect in that this figure represents the total mortality for *all* raptor species killed at Altamont Pass, not just the four target species. The appropriate figure for the four target species is 1130.2 (see attached chart prepared by Dr. Shawn Smallwood, dated Feb. 1, 2007). While the settling parties acknowledged at the February 2007 SRC meeting that the 1130.2 figure was the correct figure for the four target species, the 1300 figure is the one used in the settlement agreement and amended permits. Unless and until these documents are amended, it would appear to us that the 1300 baseline figure controls.

Second, the 1130.2 figure is based on a raw mortality figure of 359.2 (for observed deaths of the four target species), multiplied by a correction factor of 3.15 to adjust for searcher efficiency and scavenger removal (the two standard adjustment terms used in estimating bird mortality due to wind turbines). However, for purposes of estimating future mortality, the settlement agreement and amended permits contemplate that these two adjustment terms will be 2.5 or less. (Settlement, ¶ 3(a)(iii); Permit Condition 2(a)(3).) This means that, even if mortality is not reduced at all in the future, mortality nevertheless will *appear* to be substantially reduced simply by virtue of the use of a lower correction factor. For example, multiplying the raw (unadjusted) mortality figure of 359.2 in the 2004 report by 2.5 yields an estimated mortality of 898, an "automatic" 31% reduction from the 1300 baseline figure, and a 20.5% reduction from the 1130.2 figure. This means that, without doing anything to actually reduce bird mortality at the site, the wind companies, simply by using the figures set forth in the settlement agreement and amended permits, will have already met 20-30% of their future bird mortality reduction requirements. This cannot be what the County and the other settling parties intended.

The settlement agreement and amended permits provide that the SRC will establish the future mortality adjustment terms (referred to as "scaling factors" in these documents), but that the baseline will be revisited only if the factors *exceed* 2.5. (Settlement, ¶¶ 3(a)(iii); Permit Condition 2(a)(3).) However, the closer the future adjustment terms/correction factors are to the 3.15 figure used in the 2004 report, the more accurate the baseline in the settlement agreement and amended permits will prove to be and the less need there will be to revisit the baseline. By contrast, a significant problem is posed if the new factors, as determined by the SRC, are 2.5 *or less*. Yet, there is no provision in either the settlement agreement or amended permits to deal with this possible scenario.

Unless these problems with the baseline are addressed, the 50% reduction requirement will be virtually meaningless, because the baseline mortality will have been calculated using different assumptions and figures than will be the estimates of future mortality, creating an "apples to oranges" problem and thereby adversely affecting the scientific integrity and reliability of any claimed future reduction in raptor deaths.

We understand that the SRC is currently in the process of determining what a scientifically acceptable baseline should be, based on current data and analysis. In light of the above, we request that the SRC consider this issue at its next meeting and that the County and other settling parties provide a proposal, based on the SRC's analysis, for addressing the above-identified problems with the baseline. Because the settlement agreement and amended permits set forth the legally enforceable requirements, we believe that, once the baseline issues are clarified and resolved, those documents must be revised to reflect the County's and the other parties' understanding.

We appreciate your consideration of these important issues.

Sincerely,

TARA L. MUELLER
Deputy Attorney General

For EDMUND G. BROWN JR.
Attorney General

cc: Peter Weiner
George Caplan
William T. Yeates
Richard Wiebe
Brian Washington
Ann Malcolm, DFG
Kevin Hunting, DFG
Dr. Shawn Smallwood

Assessment of the mortality adjustment cap

1 February 2007

Shawn Smallwood

The settlement agreement sets a baseline mortality of 1300 raptors per year in the APWRA, as well as a cap on the collective adjustments that may be made to mortality due to searcher detection error and scavenger removal. The table below shows the consequences of these arbitrary decisions. The first two numerical columns list the mortality estimates in Smallwood and Thelander (2004), both unadjusted and adjusted for searcher detection error and scavenger removal. The third column lists the adjustment factor, i.e., the multiplier, between unadjusted and adjusted mortality. The fourth column shows the mortality estimates of Smallwood and Thelander (2004) adjusted by the arbitrary cap of 2.5. The fifth column lists the scavenger removal adjustment factor predicted from models in Smallwood (2006), representing more rigorous mortality estimation methods than used in Smallwood and Thelander (2004). The two right-most columns list the more rigorously adjusted mortality estimates and their adjustment factors accounting for searcher detection error and scavenger removal.

Taxon/group	Mortality in Smallwood & Thelander (2004)		Adjustment factor	Mortality adjusted by 2.5 cap	53-day R_C [a]	Adjusted by 53-day R_C [b] & p [a]	Adjustment for estimate at left
	Unadjusted	Adjusted					
Golden eagle	56.1	116.5	2.08	140.3	0.90	70.0	1.24
Red-tailed hawk	167.8	300.4	1.79	419.5	0.90	209.5	1.25
American kestrel	54.9	333.1	6.07	137.3	0.18	406.7	7.41
Burrowing owl	80.4	380.2	4.73	201.0	0.18	595.6	7.41
Collective 4 spp	359.2	1130.2	3.15	898.0	---	1281.8	3.57
All raptors	434.1	1300	3.00	1085.3	---	1752.3	4.04

[a] The terms R_c and p represent the scavenger removal and searcher detection adjustment terms described in Smallwood (2006). I assume searcher detection rate is 89% for large-bodied raptors and 75% for small-bodied raptors, which represent averages among studies performed in annual grasslands (Smallwood 2006).

[b] I assume a 53-day search interval for the 4 target species, but the all-raptor estimate is based on actual mean search intervals among turbine strings during Smallwood and Thelander (2004) study.

If mortality 3 years hence does not differ from that reported in Smallwood and Thelander (2004), then the use of the arbitrary 2.5-fold maximum adjustment to mortality gives the false impression golden eagle and red-tailed hawk mortality increased, while also giving the false impression American kestrel and burrowing owl mortality decreased. Applied to the 4 target species collectively, the arbitrary adjustment cap would result in an apparent mortality reduction of 20.5% (((1130.2 – 898) ÷ 1130.2) × 100%), when in fact no reduction occurred. If the adjustment cap is applied to the 4 target species, the collective estimate of which is then compared to the Agreement's baseline of 1300, then the apparent mortality reduction is 30.9% (((1300 – 898) ÷ 1300) × 100%), even though no mortality reduction actually occurred.

Using what now composes the best information on scavenger removal rates and searcher detection rates, scientifically superior estimates are shown in the second-most column to the right, and the

adjustment terms are shown in the right-most column. These are the estimates the SRC might have chosen to represent baseline mortality, unless APWRA-specific scavenger removal and searcher detection trials led us to use different adjustment terms. In the absence of new information from APWRA-specific trials, however, the estimates in the above table serve to demonstrate how much different the estimates can change using the scientific method.

Mortality estimates of large-bodied raptor species likely will be little affected by the arbitrary adjustment cap of 2.5, but those of small-bodied raptors will likely be severely restricted in the absence of any scientific reason.