

NOTES | 7/22/2010 Conference Call**Altamont Pass Wind Resource Area Scientific Review Committee**

Prepared by the Center for Collaborative Policy is no

Reviewed and Approved by the SRC

All SRC Members Present**Discussion Topics****CalWEA Study****Meeting Outcomes**

- SRC and Monitoring Team members provided input to Bill Warren Hicks of Eco-Stat Inc. on his draft Research Plan for the CEC-funded CalWEA study at the Altamont.

Action Items

Party	Due Date	Action
Bill Warren-Hicks		To contact County with revised study draft, once complete

Next Meeting

In-person meeting, July 28-29

CalWEA Study**Related Documents**

[P172 CalWEA Cover Memo to SRC 06-18-10](#)

[P173 CalWEA Research Plan 6-18-10](#)

[P174 SRC Comments on CalWEA Research Plan](#)

Overview of Research Plan

Bill Warren-Hicks of Eco-Stat Inc. gave an overview of the research plan.

- He and Jim Newman are the principal investigators.
- The study design is broad, appropriate for California and the United States, and is not aimed at the Altamont. They hope it is useful to the Altamont, but the focus is on other issues. It would, however, be completed in the Altamont, and the Altamont was selected due to the availability of a trained fatality search team.
- The purpose of the field research is to generate data to evaluate the equations for estimating fatality rates, to evaluate the pluses and minuses of the different approaches.
- The study's purpose is to develop additional models to advance the science.
- The research plan is written for a broad audience, including the CalWEA study's project advisory committee, which is made up of ecologists, bat and bird experts and statisticians.
- He said his team is incredibly open to changing or modifying the design, is receptive to constructive comments, and is interested in good science.

- The CalWEA study and the Monitoring Program have common ground, as the funding may benefit the Monitoring Team, and CalWEA will have access to experts and trained monitoring team.

Under the current design, the CalWEA study would utilize the services of Brian Karas of the Monitoring Team as its project manager, who would work on the two studies during different hours of the day. The Monitoring Team would be used passively for recording presence of placed birds, if and when found.

SRC, Monitoring Team & CalWEA Discussion

The SRC is being asked to consider whether the CalWEA research plan would have a neutral impact on the Monitoring Program, or whether changes could be made to the study to ensure that it does not negatively impact the Program. In addition, SRC members are being asked to consider whether the study might have aspects that can be leveraged for the Monitoring Program.

SRC members and Monitoring Team members made the following suggestions:

- Proposal revisions should be presented in writing to the SRC.
- Conduct a pilot study.
- The study plan should include a clear and detailed description of the pilot study, and the questions that it would answer.
- The study plan should describe a clearly testable hypothesis
- The study plan should provide more detail about the study
- The pilot study should answer logistical and timing questions involving sharing Monitoring Team staff time, money and other resources
- The pilot study should look at data management and include the measurement of environmental covariates.
- Include partial carcasses to eliminate a bias, as carcasses are sometimes deposited as partial carcasses.
- The study plan should be revised to incorporate the reduced number of turbines that will be monitored in the Monitoring Program
- The study could make use of a large body of literature on the sample size problem to look at minimum numbers

SRC and Monitoring Team members raised the following concerns about the CalWEA study:

- All five SRC members and Monitoring Team members were concerned that the study's use of a single bird species, cowbirds, makes the study inapplicable to and unrepresentative of the Altamont, as raptors are not scavenged at the same rate as other species. It was suggested that the CalWEA study find multiple species instead.
- Two SRC members and a member of the Monitoring Team raised concerns that the study would not answer any questions the Monitoring Program is asking, and the SRC members were concerned that the CalWEA study might be perceived as a surrogate for the QAQC study that has been proposed for the Monitoring Program.
- Four SRC members and a member of the Monitoring Team were concerned that the number of carcasses planned in the study could swamp the Altamont and alter scavenging patterns, or the study could cause logistical confusion on the ground,

thereby affecting the Monitoring Program fatality rate results. It was suggested that the study reduce its sample size, reduce the number of strings sampled and/or stretch out its timeframe to lower its impact on the Altamont scavenging environment.

Discussions on these topics of concern are summarized below.

Single Species Issue

SRC and Monitoring Team members urged the CalWEA study to expand its number of relevant species, acknowledging that, with a need for 1000 birds, it would be difficult. One suggested source was the Sacramento airport, where multiple species are found.

The SRC also expressed that the need is for information on raptor-sized birds.

In response, Bill Warren-Hicks said the study is not wedded to cowbirds. They were chosen because they are numerous, affordable, and were thought to be representative of the "small bird" size class. Study designers thought one species would be helpful for replication purposes. He said he would be happy to investigate potential sources for other species.

CalWEA Study & Monitoring Program Goals

One SRC member was concerned that the Monitoring Program is about to embark on a new approach with the QAQC study, and was concerned that it not be replaced by the CalWEA study, unless the latter study is a good one.

Sandra Rivera of Alameda County and Doug Leslie of the monitoring team said their goal is that the two groups can develop a study approach that would be workable and would achieve the objectives of both research programs. Both programs will need to do some placement of carcasses.

One SRC member asked why the CalWEA study did not follow the double survey approach that the Monitoring Team and SRC has developed, and Bill Warren-Hicks responded that he had not heard of it until recently.

Jesse Schwartz of the Monitoring Team summarized the QAQC, double survey or "double-blind" approach for the CalWEA participants. It would include two survey teams unaware of each others' schedules, with one team surveying certain areas that another team had surveyed previously. It offers an opportunity to find a fatality that the other team didn't detect, or confirm the lack of a fatality to develop a direct estimate of the detection probability factor. The design would use naturally placed carcasses and would develop the detection probability for different types of carcasses. It would include partial carcasses. A seasonal estimate would be developed as there seems to be seasonal variability with bird use and vegetation. The sample size would account for a 10% overlap in double surveying. The original design is described in P98. The goal is not to define the truth for every specific carcass, but to develop an estimate of detection probability. Outcomes can be rolled up into a cumulative detection probability.

Bill Warren-Hicks said that design would not meet the goals of his research, which are to develop data towards his hypothesis. For any one observation period, he needs a perfect as possible idea of the number of birds on the ground. He also needs to know the number they

find of the truth. It is an intensive look at removal rates over time, which his group feels is a function of environmental conditions. He hopes to find out the relationship between searcher detection and scavenger removal -- is there a correlation and a cause? This is very important, and it is not in the QAQC study. The study looks at survival rates, the probability of a carcass remaining. He needs a complete probabilistic model detection rate for a large number of birds to a small number of birds. He is looking at different things than the QAQC study is, the variance of removal curves over space and time and the relationship to observer bias.

Jesse Schwartz of the Monitoring Team said these models are not the Monitoring Program's priority, and he suggested that they will be very hard to populate. He does not believe it will ever be possible to totally disentangle scavenger removal and searcher detection. The CalWEA approach would not get at the movement of carcasses and carcass pieces through the placement of fresh carcasses. He said he does not have a problem with the CalWEA study if it does not interfere with the Monitoring Program, and if CalWEA representatives are willing to compromise on schedule and intensity.

One SRC member agreed that the CalWEA plan, as written, will not help answer the Monitoring Program's questions, although there may be a way to piece together rates. Monitoring Team members said that both projects will need to place birds, so there is a common interest among the two studies, but some of the problems need to be addressed.

Swamping Issues & Potential Impacts on Scavenging Environment

SRC members raised concerns that the number of carcasses in the CalWEA study could alter the number and distribution of Altamont carcasses. Ravens will find the carcasses. One SRC member said, in her surveys, ravens learned what her car looked like and followed it. Ravens learn to identify people, vehicles and processes. If a study has one project manager, ravens will learn to recognize that person, and even their vehicle.

Brian Karas of the Monitoring Team said the team is doing scavenging trials now, and has not noticed a cadre of scavenging birds.

Jesse Schwartz of the Monitoring Team said the CalWEA study design will need to work around the Monitoring Program schedule and resources. It would be better if the CalWEA study time was lengthened.

In response, Bill Warren-Hicks expressed flexibility in regards to timing.

Brian Karas said the Monitoring Team should be able to tell if there is a change in the removal rate as a result of the CalWEA study.

One SRC member asked, then, if it would be possible to back adjust adjustment rates or fatality rates for that particular study period. Another SRC member asked if it would be possible to stop the situation of adverse impact to fatality data if it was known that it was happening.

Jesse Schwartz said that would not likely be statistically possible, because of the considerable variation that already exists at the Altamont. His concern is changing scavenger removal and searcher efficiency in unpredictable ways. He is concerned about the large number of carcasses in the CalWEA study and the risk of trying to shoehorn the Monitoring Program into an intensive study. Ninety-eight percent of the Monitoring Program's outcomes are from strings in which 2-3 carcasses are discovered per year. His concern is that with a high-intensity study, with modifications to the environment, that the Monitoring Program would be moving backwards.

Bill Warren-Hicks said he could consider a reduction in his sample size. However, the pilot study results may dictate the number of required replicates in the study. CalWEA has the funding, there is a real hole in the literature, and his group wants to move the science forward. His group is agreed on the intensity level of the study. He does not know what to do about the cowbird issue.

Jesse Schwartz asked if it would be possible to lengthen the study and limit the number of strings at which carcasses are placed.

One SRC member said he shares a lot of others' concerns, mainly, the potential for the study to be very logistically confusing on the ground, putting both studies at risk. It will be important to very clearly describe how the two studies would be blended. He is concerned about the cost and logistical impact to the Monitoring Team. Although he is concerned right now, things seem to be moving in the right direction.

Pilot Study

One SRC member suggested that the study be rewritten as a pilot study. Another said the purpose of the pilot study should be to determine if the full study should be undertaken.

In response, Bill Warren-Hicks said he would be nervous if the SRC concluded, after the pilot study was completed, that the study should not move forward.

One SRC member said this was a Catch-22, as the bottom line is that if CalWEA invests in a pilot study, they will need to do their full study. If that is the case, the pilot study description needs to be as detailed as possible so the SRC can evaluate it. Another SRC member said it will be up to CalWEA to convince the SRC with its pilot study that the full study could be safely undertaken. A Monitoring Team member said CalWEA will need to decide whether it wants to work together and is willing to compromise and engage in conflict resolution.

Heather Rhoades-Weaver of CalWEA said the organization may be able to obtain a no-cost extension from the CEC, which would allow the contract to run until July 2012.

Monitoring Team and SRC members agreed that the day's discussion had been very much informed by the results of the KB study, which brought to light the number of ambiguities resulting from scavenger removal and searcher detection. They agreed on the importance of writing up the study, as a lot was learned about these complications.

Next Steps

Bill Warren-Hicks said he will consider the various suggestions, and look at opportunities for using other species, as he revises the study plan in the next few weeks. He will do everything he can to try to fix the issues raised.

ATTENDEES**SRC**

Joanna Burger
Jim Estep
Sue Orloff
Shawn Smallwood
Julie Yee

Consultants

Doug Leslie
Brian Karas
Jesse Schwartz

Identified Public

Renee Culver, NextEra
Kris Davis, Drinker Biddle
Chris Dreiman, enXco
Jim Hopper, AES/SeaWest
Ryan McGraw, AWI
Nancy Rader, CalWEA
Heather Rhoades-Weaver, CalWEA
Chrissie Strother
Bill Warren-Hicks, Eco-Stat, Inc.
Craig Weightman, CDFG

Staff

Sandra Rivera, Alameda County
Ariel Ambruster, CCP