

NOTES | 11/13/2007 (P66)

Altamont Pass Wind Resource Area Scientific Review Committee Conference Call

Prepared by the Center for Collaborative Policy
Reviewed and SRC Final Approval on 2/13/08

AWI Black Blade Painting Study Design

Overview

The SRC agreed on a sample size for AWI to conduct a study on the south side of Altamont. However, during the discussion, the SRC identified a fundamental problem with the sample, which was treating some turbines in wind walls and leaving others in the wind walls as the control group. The SRC felt this was a fundamental flaw to the study and suggested that AWI revisit the sample and report back to the SRC.

Related Documents

[P47_AWI Black Blade Painting Study Plan \(10/19/07\)](#)

[P57c Yee Statistical Power for blade painting \(11/13/07\)](#)

[P62 Estep Comments on AWI Black Blade Study \(11/5/07\)](#)

[P63 Smallwood Comments on AWI Blade Study \(11/7/07\)](#)

Yee Summary of [P57c Yee Statistical Power for Blade Painting \(11/13/07\)](#)

Julie Yee conducted another power analysis for all south-side turbines (rather than just turbines like AWI's.) The rates of fatalities per month per megawatt were less than half of the rates that Yee used in the previous power analysis, which were based on north and south sides combined. The exception is that the red-tailed hawk fatalities were higher. The data include some golden eagles that were prematurely removed from the monitoring plots due to reporting requirements. Her initial recommendation would be to go with the larger sample size; however, it only makes approximately a 10 increase in power.

As with the September analysis, Julie conducted the power analysis under two scenarios: one with a four-month winter shutdown (i.e. shutdown exemption not granted) and one without a shutdown (shutdown exemption granted). While conducting the analysis, Julie discovered a typographical error in her previous simulation of data under the winter shutdown scenario, so this portion of the September power analysis is invalid. The error artificially inflated the power of detecting a blade painting effect. In today's analysis, she has corrected that error.

Julie pointed out large discrepancies between the fatality rates in the south that she calculated based on recent data (2005-07) versus fatality rates across the north and south that Shawn Smallwood previously calculated based on CEC survey data (2000-03), and she is unsure if the previous rates were adjusted for scavenging or searcher detection. Shawn was also unsure if the data were adjusted. He thought the previous rates that Julie used in the September power analysis might represent winter mortality.

Detection Error

The SRC discussed the potential error of failing to detect a 25% reduction in fatality rate due to blade painting effect (Type II error, or the error of false negatives) and whether the study would be worth doing. Type II error can be reduced by applying more liberal conditions by which a significant effect is confirmed from the data, however this typically leads to increased rates of confirming an effect is significant when in reality it doesn't exist (Type I error, or false positive). Over the course of the discussion, several members agreed that they were comfortable with a Type I error of 0.10 (" α ") and would be willing to extend the study past the 17 months if more monitoring data becomes necessary to confirm the results. One member disagreed with extending the study because the extension would be into a time period beyond the Avian Wildlife Protection Program and beyond any influence of the SRC. There was also no commitment to fund the extended portion of the study.

SRC Tentative Agreement on Sample Size

At this point in the meeting, the SRC approved the study design with 136 and 170 turbines in the sample size. The approval was contingent on AWI modifying the study plan to create an option to expand the study period by 12 months if needed to confirm the effect of blade painting. The approval was also contingent on AWI reflecting the SRC recommendation in the study design that an independent analyst will gather data, conduct the analysis and prepare a report for SRC review. The SRC recognized contingency issues might arise if the monitoring would not continue past November 2009. The SRC also recommended blade painting occur first for turbines that are within the existing monitoring program so data can be collected immediately and the monitoring program budget would not be affected. The SRC was not recommending the exemption from the winter shutdown.

The SRC still had concerns about the study and blade painting, namely:

- The long-term applicability of the management strategy.
- The health effect justification claimed in the study design. The SRC does not necessarily support this rationale, and it should not be in the proposal.
- Concerns about granting a winter shutdown exemption to AWI in exchange for participating in this study because the SRC has recommended more shutdown to meet the 50% reduction goal, not less.

Public Comment

Brian Karas, Monitoring Team Representative, highlighted that many of the AWI treated turbines are in wind walls. Thirteen strings have treated (painted) and untreated / control (unpainted) strings so close together that attributing the fatality to the correct string would be problematic.

- 91 turbines affected by this issue in assignment
- 66 of those are in a wind wall. Of those 37 treated and 29 in control
- 8 turbines in treatment and 17 in control group have closeness issue

The problem is that one string in a wind wall might be painted while another string in the same wind wall will remain un-painted. This makes assigning the detected bird fatalities to the appropriate turbine extremely difficult. The SRC agreed that all turbines within the wind wall need to be put into the same group (unpainted versus painted). FPLE tends to own the higher turbines in the wind wall while AWI tends to own the lower turbines. The SRC considered whether any entire wind walls should be painted, however AWI and FPLE have not discussed this type of collaboration. If none of the entire sample plots with wind walls can be painted, then that leaves

two options which are both problematic. These options are that all AWI turbines in wind walls would have to be controls or all AWI turbines in wind walls are excluded from study. However, all the wind walls cannot be in the control group because that will bias the study, and removing the wind walls from study will reduce the sample size too much.

The SRC decided to not approve the study as currently designed and continued to discuss AWI's options for revising the study design.

Blade Painting Sample Options

The SRC discussed the following options for AWI to reconfigure the sample size:

- Extend the sample to the north side of Altamont. Distribute sample evenly between the north and south. Exclude wind walls.
- If sample is in the south, remove the wind wall strings from the sample and compensate by adding other 56-100 turbines. (Would involve another company's turbines)
- Treat wind walls as unit assigning each whole wind wall to either treatment or control. (Would involve another company's turbines)

If Sample Size is 136 / 170, provide funding commitment for the additional 12 months of potential monitoring (beyond the 17 months of monitoring) that may be required to demonstrate blade painting effect. The other option is to expand the sample size to 150/250 turbines with 17 months of monitoring.

Concerns about the Exemption

- 90 control turbines are in the monitoring program
- 99 treated turbines are in the monitoring program.
- If the exemption is granted, then 200 turbines will be lost from the shutdown program; however they will be monitored in conjunction with the monitoring program.

In response to an inquiry by the facilitator, all SRC members said they would not recommend that the County grant an exemption to the 4-month winter shutdown.

In response to an inquiry by the facilitator, four members said they could live with the County granting an exemption to 2-months of winter shutdown contingent on AWI fixing the study design. One member was against granting the exemption for the 2-month shutdown.

Meeting Participants

SRC

Joanna Burger
Jim Estep
Sue Orloff
Shawn Smallwood
Julie Yee

Identified Members of Public

Julia Sorenson
Bill Damon
Joan Stewart
David Cleary
Ermony Ergis

Monitoring Team

Brian Latta
Brian Karas

Facilitator Gina Bartlett, Center for Collaborative Policy