

## DOCKETED

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**Ivanpah Solar Electric Generating System (Ivanpah)  
Avian & Bat Technical Advisory Committee (TAC) Meeting**  
June 28, 2017 – Meeting Notes

**TAC Meeting on June 28, 2017 at the California Energy Commission**

**TAC Members**

Present: Eric Knight – TAC Co-Chair - CEC  
Thomas Leeman – TAC Member - USFWS

Via Teleconference: Magdalena Rodriguez - TAC Member – CDFW  
George Piantka – TAC Member - Solar Partners I, II and VIII,  
LLC

**Invited Guests**

Present: Jon Hilliard – Biological Resource Manager CEC  
Carol Watson – CEC Biologist  
Tim Sisk – Solar Partners I, II and VIII, LLC  
Karl Kosciuch – WEST, Inc.  
Marc Sydnor – Sydnor and Associates, Inc.

Via Teleconference: Daniel Riser-Espinoza – WEST, Inc.  
Amy Fesnock – State Biologist - BLM

**Introductions**

- Attendee introductions (TAC members and invited guests).

**Review of Agenda**

- Agenda items reviewed – no changes.

**Follow-up Items:**

- TAC to review and provide comments on Summer Report – Item completed and Summer Report docketed on June 16, 2017.
- TAC to review and provide comments on Annual Report and WEST to respond – Item ongoing; discussion below.
- WEST to provide a memo on the proposal to modify the small bird searcher efficiency trials to use feather spots to substitute for small bird carcasses – Item completed; submitted April 21, 2017.
- CEC staff to review and comment on the deterrence system update memo – Item completed; TAC found memo sufficient, and CEC will not provide comments.
- CEC to designate a new official TAC Co-chair member – Item completed; Eric Knight is the TAC Co-Chair for CEC.
- Solar Partners to add Thomas Leeman at USFWS and Shawn Pittard at CEC to TAC email list – Item completed.

- TAC to revise notes from March and append the April meeting 2017 meeting notes – Item completed and Notes docketed June 16, 2017.
- Final TAC comments to be provided for the proposed searcher protocol revision to use feather spots instead of small bird carcasses – Item ongoing; discussed below.

**TAC Discussion of Searcher Protocol Revision Proposal:**

- TAC discussed the percentage of carcasses placed for trials at the facility versus the number of detections. WEST indicated that the number of carcasses placed for searcher efficiency and scavenger trials is 120 per year versus 695 detections. Trials therefore are approximately 17% of the total number of detections.
- TAC discussed the potential difference in the estimates based on the use of feather spots versus carcass. WEST indicated that there is a difference of 1-2 % detectability in feather spots and carcasses. This difference would then result in 1-2 bird difference in estimates or 1-2% difference from current estimates.
- TAC discussed how the modeling would be conducted using only feather spot data. WEST stated that for purposes of modeling, small birds and feather spots would be combined to produce estimates.
- TAC discussed the visibility of the feather spots versus carcasses, with a focus on whether a lower number of trials for carcasses might eventually affect the ability of searchers to find detections in the field. WEST stated that the trials indicate a 1-2% difference in the ability to detect feather spots versus carcasses; however, the effect on the ability to detect carcasses in the future would be unknown.
- TAC discussed the combining of the searcher efficiency and carcass removal trials. WEST stated that is a viable approach; however, it requires additional coordination and would be a deviation from current practice.

**Follow-up Items:**

- TAC recommends continuation of searcher efficiency trials as per current practice.

**Presentation by WEST of Confidence in Avian Fatality Estimation:**

- WEST explained that the certainty of the estimates is partially driven by inference from detections, which is largely characterized by the type of detection. For example, singed carcasses show direct evidence of a project effect; collisions show direct and indirect evidence of a project effect; and unknowns show no evidence of a project effect. Hence, inference associated with singed carcasses is high, whereas inference for unknown detections is low.
- WEST also explained that the certainty in estimates is related to the probability of detecting a carcass within different areas of the facility. High probability occurs in the tower area where there is little vegetation and 100% of the area is searched; low probability occurs in the heliostat area where there is lower visibility from vegetation and less of the area is searched.
- Combining these two factors, there is high confidence in the estimates from the tower area for singed and entrapped detections; moderate confidence in the tower area for unknown cause and in the heliostat area for known cause; and low confidence in the estimates from the heliostat area with unknown cause.

- With respect to unknown causes, WEST explained that reports do not speculate on unknown causes (e.g., background mortality, predation, etc.) and additionally explained that evidence from previous necropsies at the site did not show evidence of overheating or ocular damage.
- WEST discussed the potential for data gaps in diagnostic measures, specifically comparing the classification of the cause of mortality based on the techniques employed at the site versus the use of necropsy. The correlation of these two methods was high, indicating that site methods are sufficient means of classification.
- WEST discussed the spatial distribution for unknown cause detections, stating that two statistical tests were conducted. The first examined whether the spatial distribution of unknown cause detections in the heliostat field varied from a random pattern. The pattern was concordant with a random distribution. The second test used a generalized linear model to examine the fit of unknown cause detections in the heliostat field based on the distance from the tower, direction from the tower, the size of the carcass and the distance to the nearest monitored fox den. No covariates tested were significant at the 0.10 significance level. Finally, the number of estimated unknown cause fatalities per acre in the heliostat field and tower area were compared and showed significant overlap of the confidence intervals, thus suggesting that areas are comparable.
- WEST stated the evidence indicates that no causal mechanism is apparent either through the physical examinations of the evidence collected, or through analysis of the patterns of detections. Thus, speculation within the report regarding causal mechanisms would not be appropriate.

#### **TAC Discussion:**

- TAC discussed the history of the unknown detections/estimates analysis previously conducted. WEST stated that in the original plan transects were searched offsite; however, these were not sufficient to establish background mortality.
- TAC discussed the ongoing efforts to determine background mortality within the Mojave Desert. The Avian Solar Working Group is currently examining data for several areas; however, the Ivanpah area is not included in that study.
- The TAC discussed the creation of the multiple feather spots by scavengers. WEST stated that the camera trap data for the carcass removal trials have shown ravens ripping apart carcasses creating multiple feather spots; however, insufficient data exists to adjust estimates for this known phenomena.
- TAC requested the inclusion of the spatial analysis in the Annual Report. WEST stated that within an existing section of the report, spatial and temporal distribution of carcasses is considered, and that WEST will place the unknown cause spatial analysis in that portion of the report.
- The TAC discussed whether the known fatalities have been examined for a random distribution. WEST stated that known distributions were not examined for geo-spatial distribution.

#### **Follow-up Items:**

- WEST to provide a summary of detectability by season/year and location for monitoring to date.

- WEST to include the spatial analysis in the Annual Report, including a justification for factors within the generalized linear model.

**Presentation by WEST of the Winter 2016-2017 Report**

- As per a typical winter season, the number of avian detections and corresponding estimates of mortality were lower than in spring and fall.
- No obvious temporal pattern in detections was observed in the tower area or heliostat area.
- High confidence was associated with the tower area singed and collision estimates.
- Moderate confidence is associated with heliostat area known estimate and tower area unknown estimate.
- Low confidence was associated with the heliostat area unknown estimate.
- Per the plan, the mortality was considered “low,” which means estimated avian mortality or injury levels that have minimal or no potential to negatively affect local, regional, or nation populations within a particular species or group of species.”

**TAC Discussion:**

- The TAC pointed out some typographical errors in the Winter Report that need revision.

**Follow-up Items:**

- TAC to provide comments for Winter Report.
- WEST to revise the Winter Report per the comments to be provided.

**Presentation by WEST of the Spring Monitoring:**

- Overall, searcher efficiency and persistence rates were within the plan assumptions
- The number of detections was down relative to previous spring seasons.

**TAC Discussion:**

- None.

**Follow-up Items:**

- None

**Next Meeting:**

To be scheduled during the week of September 14<sup>th</sup>.