

# **Altamont Scientific Review Committee**

## **Summary of Significant Actions & Milestones in the 2010-11 Bird Year**

Developed by the Center for Collaborative Policy

### **Monitoring Program**

In July 2011, the SRC reviewed the Monitoring Team's revised plan for future monitoring and reached the following consensus recommendations for future monitoring:

- The SRC prioritized the following studies: the burrowing owl distribution, abundance and mortality mechanisms study (P90, which the SRC plans to soon update); the detection probability (QAQC or double observer) study; and a search radius study on a subset of turbines to develop information to inform potential search radii for repowered turbines. The SRC agreed that the QAQC study should be part of the monitoring program, rather than a separate study.
- Monitoring should track searcher detection rates with scavenger removal, with supervisor confirming presence/absence and carcass condition
- The placed carcasses for the detection probability study should include a variety of species, and best efforts should be made to include raptors.

In addition, a majority of SRC members recommended that the Monitoring Team's proposed rolling panel design be applied to 40% of monitored turbines, with the remaining 60% at fixed turbine locations selected from the currently monitored turbines, rather than the original 50/50 proposal, as this may allow for greater comparability with current study data. Increase sample size as a buffer to account for turbine attrition.

### **Assumptions for Measuring SRC-Recommended Baseline**

The SRC reviewed the Monitoring Team's memo on approaches to measuring the SRC-recommended new baseline (M55 New Baseline Memo). The SRC supported the memo's approach with the following changes:

- Develop an approach to representing baseline installed capacity that most accurately reflects the pre-management environment that would give credit for significant changes on the ground through hazardous turbine removal, attrition and repowering. Turbine removals to be accounted for would be the Flowind turbines, Buena Vista, Howden and Kenetech turbines.
- To address refinement of the 3-year-average baseline, the SRC recommended a process, modeled on Shawn Smallwood's methodology used for the Tres Vaqueros turbines, and suggested that the settling parties identify which operating groups would be the focus of credit actions. SRC recommends patching best available rates for the larger groups only: Flowind, Buena Vista, Kenetech, and Howden.

## **Adaptive Management Program**

The SRC in June 2011 developed recommendations on plans for adaptive management, available on the SRC website at [P167 SRC Recommendations on Adaptive Management Proposal](#).

## **Burrowing Owl Studies**

After considering the relative contributions to science, management and repowering of an expanded search radius study and some type of burrowing owl study, the SRC agreed in December 2010 to recommend that available monitoring funds be allocated to a burrowing owl study incorporating the following elements:

- An analysis of existing historic fatality data to identify burrowing owl fatality hot spots, clusters and potential related environmental attributes from available GIS layers;
- Development by the SRC and Monitoring Team prior to March 2011 of the design of a pilot study on burrowing owl behavior; and
- With planning to be accomplished prior to the end of March 2011, a limited distribution and abundance study in lower terrain, with report back to the SRC.

After extensive discussion among the SRC and with Monitoring Team members, the SRC in February 2011 prioritized a burrowing owl distribution and abundance study based on P198, which was eventually undertaken by former SRC member Shawn Smallwood and one member of the Monitoring Team under the umbrella of NextEra. Other studies, in descending order of priority:

- An analysis of existing historic fatality data to develop information on presence of burrowing owl populations in the Altamont, including an analysis of seasonal and yearly variation of fatalities that might shed light on the degree to which populations at various sites vary or remain constant; and
- The summer set of behavioral observations detailed in [P194 SRC Burrowing Owl Behavior Pilot Study Proposal](#) to assess the utility of techniques for later research.

The SRC at that meeting agreed that key objectives of burrowing owl studies are the following:

- To inform repowering;
- To test several hypotheses, including:
  - Burrowing owl mortality is related to proximity of burrows to turbines
    - Burrowing owl mortality is associated with specific positions of active turbines relative to occupied burrows (i.e. distance, directions, and/or slope
    - Mortality increases with increasing density of burrowing owls
    - Mortality is influenced by topography
  - Burrowing owl deaths are indirectly turbine related
  - Burrowing owl mortality is partly dependent on behavior
    - Predators use turbines to hunt for burrowing owls
      - Perch-hunting predators hunt from turbines and kill burrowing owls at their burrows
      - Predators flush burrowing owls into the rotor swept area

In July 2011, the SRC recommended continuation by the Monitoring Team of the Smallwood/Monitoring Team burrowing owl distribution and abundance study through December 2011, and ideally through February 2012. If resources are available, the SRC recommended beginning a pilot burrowing owl behavior study to test observation equipment. The Monitoring Team agreed to work with Shawn Smallwood to digitize avian behavioral data gathered by the Team during the past year.

### **QAQC Study**

The 2010-11 bird year marked the Monitoring Team's launch of the QAQC Study.

The SRC made the following recommendations for the detection probability study that began in October 2010:

The SRC in December 2010 recommended:

- That the Monitoring Team, in undertaking the study, should pursue the goal of developing methods to increase the accuracy of fatality estimates going forward, while ensuring that the data are as comparable as possible to the 2005-2009 period
- That carcasses of known age, such as fresh carcasses be used, and that carcasses be left on the ground for 90 days; and
- Endorsed an effort by SRC member Julie Yee to work with the Monitoring Team to conduct a simulation analysis to determine if QAQC data collection will produce a viable analysis.
- In July 2011, the SRC agreed to a power analysis by SRC member Julie Yee, working with the Monitoring Team, to evaluate the statistical power of the current level of the QAQC design and determine the level of effort needed to produce cumulative detection probability estimates.

### **Monitoring Report (M21)**

- The SRC in February 2011 agreed that M21, incorporating analysis of the three-year "current study" period, is finalized and requires no more input from the SRC.
- A Report incorporating 2009-10 data, and based on a new moving-average baseline developed by the Monitoring Team and the SRC as an alternative to the 1300 baseline used by the Settlement Agreement, was produced by the Monitoring Team and reviewed by the SRC in June 2011. The SRC complimented the report as well done, asked for an additional analysis of seasonal shutdown effects on mortality, among other changes, and reaffirmed its previous requests for incorporation and analysis of bird use data to provide information on annual population variability and context for 2006 data.

### **Hazardous Turbine Review**

The SRC in June 2010 finalized the Hazardous Turbine Relocation Guidelines (P70), and in June 2011 developed a method to begin examination of the effectiveness of its Hazardous Turbine rankings. The SRC recommended that the County ask companies to provide up-to-date data on which turbines were removed due to attrition versus hazardous ranking: How many turbines, and their rankings, in each of two periods removed.

### **enXco/FloDesign Avian Safety Validation Study**

The SRC heard a presentation in July 2011 by FloDesign on a new turbine technology and concepts for an avian safety validation study to test the technology in the Altamont in collaboration with enXco. The SRC supported the development of a proposal for the study.