

Meeting Summary | July 21-22, 2011

Altamont Scientific Review Committee

Developed by the Center for Collaborative Policy
Reviewed and approved by the SRC

All SRC Members Present:

Joanna Burger

Jim Estep

Sue Orloff

Julie Yee

(One seat vacant)

Key Outcomes

1. QAQC Study

After reviewing a Monitoring Team preliminary report on the QAQC Study and an initial analysis of October-May data, the SRC made the following recommendations:

- That the Monitoring Team continue with the current methodology for the remainder of the 2010-11 bird year.
- SRC Member Julie Yee and the Monitoring Team will evaluate the statistical power of the current level of the QAQC design and conduct a power analysis to determine the level of effort needed to produce cumulative detection probability estimates.

The SRC will continue considering whether to continue the QAQC Study as is, or in a modified form, in the 2011-12 bird year. The issue will be considered at one or more August conference call meetings (the first scheduled for August 11 at 10-12 PDT) and at a September 26-27 in-person meeting.

2. enXco/FloDesign Avian Safety Validation Study

The SRC heard a presentation 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, to be considered at the SRC's next meeting.

3. Other Monitoring Team Studies

The SRC considered options for other Monitoring Team studies after July 2011. Options included a pilot burrowing owl behavior study to test observation equipment; digitization of avian behavioral data gathered by the Monitoring Team during the past year; and continuation of a burrowing owl distribution and abundance study.

The SRC prioritized and recommended burrowing owl studies as follows:

- Continuation of the current burrowing owl distribution and abundance surveys through December 2011 and ideally through February 2012 (Task 1 of P216 Shawn Smallwood proposal presented at the meeting).

- Pending available resources, proceed with the burrowing owl behavioral pilot study.
- [The Monitoring Team determined its existing budget can support digitization of behavioral data.]

Action Items & Meeting Follow-Up

Party	Due Date	Action
SRC	10 AM-Noon August 11	Next Conference Call Meeting
SRC	September 26-27	In-Person Meeting (2 days)
Monitoring Team		Please include author names in reports
Alameda County	ASAP	To circulate DIP memo to wind companies, once dates added by MT
Wind companies		To provide info for DIP
Monitoring Team		To send DIP spreadsheet & map to SRC and public for input before new bird year
Monitoring Team		To fund \$7000 Shawn Smallwood digitization of recently collected behavior data
Monitoring Team	First two weeks of August	Final 05-09 bird fatality study released

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Meeting Account

Announcements & Updates

Sandra Rivera of Alameda County announced that Mike Morrison has been nominated to fill the seat vacated by Shawn Smallwood. The Board of Supervisors appointment is scheduled for July 26. He is attending this meeting on his own, and will be given an opportunity to speak on agenda items during public comment.

Mike Morrison gave a self introduction, noting that he is a professor at Texas A&M University focusing on birds and bats. He was NREL's biological consultant for 10 to 12 years and worked on follow-up studies on the Altamont. His focus now is mainly on Texas and California endangered species and study design approaches.

QAQC Study Preliminary Report

Related Documents

[M80 QAQC Study Preliminary Report](#)

M81_QAQC Study Interim Report 7-21-11 Presentation Slides

Facilitator Mary Selkirk said the primary goal at this meeting is to hear the SRC's initial responses to the QAQC report and to make any recommendations for proceeding. Julie Yee has only recently gotten data to conduct further simulation studies, so she has no new information on her simulations for this meeting.

Presentation on QAQC Study Preliminary Report (M80)

Doug Leslie, Monitoring Team Project Manager, gave an introduction on the QAQC Study, saying the SRC had initially been interested in a QAQC approach. During the development of the study plan design, the approach shifted from a mark-recapture approach to double sampling. The QAQC Study accounts for about 30% of the Monitoring Team's budget. He apologized for not having considered the need for the report earlier in the year. The report was produced quickly and should be considered to be preliminary. It does not include incidental and WRRS data or large raptors. The Monitoring Team is not advocating for or against the QAQC approach. It was designed by Jesse Schwartz and is very new and innovative. The Monitoring Team would like any SRC input on design changes or analysis approaches.

One key issue, he said, will be agreeing on the best terminology to use. The report refers to "aggregate detection probability" representing overall detection probability including all sources of error. "Cumulative detection probability" refers to average detection probability over each day. Perhaps a subcommittee could work through terminology issues.

Jesse Schwartz of the Monitoring Team gave a PowerPoint presentation (see M81_QAQC Study Interim Report 7-21-11 Presentation Slides). He said the purpose of the QAQC Study, which is similar to the EPA's QAPP approach, is to provide greater certainty in the assessment of detection probability by putting checks and balances around our understanding of error in relation to our conclusions. The monitoring design would not pass QAPP; for example, there is little confidence in the data from the high fatality 2006 bird year. No one else is taking this Altamont QAQC approach, which is intended to develop an understanding of our levels of certainty.

In his presentation, he and Doug Leslie made the following points:

- The key terms section is a strawman, and he would like to hear SRC thoughts on best terminology.

- The terms are needed, as a peer-reviewed paper needs a lexicon, and the report will be published when it is robust. The double sampling approach measures not only searcher efficiency and scavenger removal, but also incorporates aggregated sources of variability, for example, rain, or observer variability, or when a searcher comes down with the flu and can not search that day.
- "Aggregated detection probability" is reflective of the approach used in Shawn Smallwood's 2007 paper, which put together searcher efficiency and scavenger removal. However, the QAQC Study is measuring something else, an overall measurement that assesses detection probability directly rather than its components. The study will allow the Monitoring Team to identify the level of confidence about its small raptor curve, which is information the Team did not have four years ago. This can help in assessing the cost and benefits of various management approaches for small birds.
- In Table 9, the two teams (primary and secondary) had about the same estimates of percentage efficiency in finding placed carcasses (about 40%.) When searching for not placed carcasses, they had different efficiency estimates: the primary team estimate was 57%, while the secondary team estimate was 40%. Monitoring Team member Brian Karas suggested the difference might be caused by the fact that the carcasses for the secondary team are older.
- In considering ways to raise the efficiency of monitoring approaches, different types of programs might be considered, such as the use of dogs in selected samples for small raptors, or other more intensive techniques.
- It might be helpful to run a small analysis on 60 records of small raptors based on estimated actual day of death. A subcommittee could be created to review the actual records, similar to the KB study, taking a preponderance of evidence approach. One SRC member suggested filtering out feather spots.
- Table 11, once finalized with more data, could be used to choose the best estimator for each type of carcass, using best professional judgment and a preponderance of evidence approach. There may be a different hypothesis for each category of carcass.
- Doug Leslie cautioned that the means and standard deviations of the data so far are large, reflecting a lot of variation.

SRC Comments and Questions

SRC Members made the following comments on the preliminary report and the QAQC Study during the discussion:

- All Monitoring Team reports should list names of the authors.
- During a post-search, a searcher could find other birds, but during a fatality check other birds would not be found. In response, Jesse Schwartz said the different pieces of information are being used very carefully and treated differently. So far, the post-search and fatality check information is only being used in the analysis to document presence/absence of a known fatality.
- There is concern about whether the follow-up search is systematic or is focused on searching for known carcasses. These would have very different implications
- The data would not capture movement of carcasses by predators and scavengers. Jesse Schwartz agreed that there will be some false zeros. He is using the data very carefully and thinks he is treating it appropriately.

- Some SRC members were concerned by the data in Table 9 indicating that only 14% of carcasses were detected by both primary and secondary teams. Jesse Schwartz described this as the monitoring technique having a power of 14%. This is the reason we are doing this study -- we are doing our best to capture this variability in our curves. Doug Leslie said that variability is not captured in a standard searcher efficiency trial, which doesn't take into account that the trial occurs over an interval. One SRC member said the number was disturbing, because it was not higher. Another SRC member did not find the number surprising, and expects that it will increase for medium and large raptors.
- Monitoring Team and SRC members discussed how to interpret this statistic, and whether the primary and secondary searches would be statistically analyzed as being independent from each other, i.e., two independent observations, or not, and would be considered more of a compound joint probability. Another issue is how time or decay will be included.
- One SRC member said the analysis should look not only at the correspondence of detections, but also misses.
- Some SRC members questioned the use of a traditional R^2 with a logistic regression. Other options for a generalized R^2 are available.
- Figure 2 was confusing and did not communicate a clear message.
- One SRC member asked why Figure 2 showed such a difference between naturally detected and placed carcasses. Jesse Schwartz said his hypothesis is that placed carcasses act more like natural fatalities, and data on naturally detected carcasses begins to be collected at some point in time after the bird dies.
- One SRC member preferred Figure 4 to Figure 3.
- In Figure 4, over a 30-day interval, the cumulative detection probability will be greater than aggregate detection probability.
- One SRC member said what seems to matter the most is the search interval, not the age of the carcass. Monitoring Team members agreed, saying that is why the CEC recommends a one-week search interval.
- SRC members asked for clarification on whether carcasses are picked up or left on site. Monitoring Team members said carcasses are removed if they are fresh and usable; if not, they are picked up at the next primary search.

Public Comment

Renee Culver of NextEra asked what the time frame is of the data used. Jesse Schwartz said data are from October through May, incorporating 1094 string searches. She also asked why the report focused on only small raptors. Jesse Schwartz said he chose them because they have posed the biggest challenges.

Mike Morrison asked if the goal is to find a better way of finding dead bodies. In response, Jesse Schwartz said yes, the goal is to capture uncertainty and to think about how to control for it.

Mike Morrison said he didn't think this is the way to go about the intensive method, as it may tell us what we already know. We've been searching the same way forever and that's where the problem is. Perhaps there needs to be a different way of people looking, or of using dogs.

Jesse Schwartz agreed, saying we may need to look at our techniques, and consider dogs.

Shawn Smallwood said his recollection of the study's intent is to get past sources of variation and to get rid of the source of error, and combine searcher efficiency and scavenger removal to get one term. This is complicated with the four searches. He doesn't think the pre- and post-searches are needed, just carcass checks and the regular searches. That would be simpler and more cost-effective. A problem is using found carcasses when the age is unknown. The removal rate is huge in the first few days, so, when using found carcasses, you are mostly looking at searcher detection rather than scavenger removal.

Jesse Schwartz agreed, but said that Monitoring Team is doing its best given that burrowing owl carcasses are not available for placement. He said he is not advocating for long-term use of the QAQC approach. The question is can we develop a design with a 35-day interval that we can support? Perhaps our questions need to be directed towards management -- maybe there needs to be a more intensive technique for small birds?

Renee Culver of NextEra asked about incorporating data from WRRS and incidental finds. She is concerned that there be enough information to be able to make decisions before the new bird year. In response to Shawn Smallwood's question, there needs to be consideration now of what a different design would look like.

Facilitator Mary Selkirk said this is an important question, what information and data are needed between now and September so the SRC can make a recommendation.

Shawn Smallwood said it would be helpful for the SRC to see plots of the data, as the report provides no way to assess how the curves fit the data.

Brian Karas of the Monitoring Team said past searches and past detection probability influence the detection probability of later carcass searches, so they are non-random. This is a subset of the carcass population that is more likely to be detected, and so may not be representative of the curve we are trying to estimate.

Report Recommendations Discussion

The report recommends focusing QAQC efforts for the remainder of this bird year on longer intervals to help in the evaluation of the later portion of the cumulative detection probability/interval relationship. Some SRC members were concerned, however that doing so might result in too small of a sample size, and preferred that more data be gathered to pinpoint the first half of the interval.

Jesse Schwartz said the Team will be getting more carcasses to place and summer generally has a higher level of fatalities. The average interval to date is four days, which is quite short. He was concerned that the results might not provide sufficient information to produce a detection probability estimate for all portions of the curve.

An SRC member suggested that carcasses could be left out for the next primary search in order to inform the later half of the interval. Team members said that the next primary

search would not be blind, although in some cases, there may be different searchers, or searchers may forget about the location of previous carcasses.

SRC Recommendations on QAQC Study

The SRC made the following recommendations:

- That the Monitoring Team continue with the current methodology for the remainder of the 2010-11 bird year.
- SRC Member Julie Yee and the Monitoring Team will evaluate the statistical power of the current level of the QAQC design and conduct a power analysis to determine the level of effort needed to produce cumulative detection probability estimates, which will be the subject of a conference call.

Public Comment

Mike Morrison said he thinks continuing the QAQC study will be a waste of time, as it will generate the same information -- there is a methodological, not a sample problem. There is an interval issue and perhaps a transect design issue. Given the number of confounding variables, including time, space, physical sampling, weather, season, and predator populations, the current sampling will not get the goal of determining the trend in the number of birds killed. It is time for a reassessment. In response, Doug Leslie of the Monitoring Team said it may be helpful to look at a new approach. The key question is what can be done to make the Monitoring Program information compatible in the next few years as repowering occurs.

Shawn Smallwood said this is the most expensive detection trial he has heard of. Problems include the small sample size and the undetermined-age carcasses. This is the only place in the United States doing this. Rather than four full carcass searches, it would be better to change the search interval to every two weeks to achieve a smaller error rate.

Renee Culver of NextEra asked if there was an issue with the comparability of data from 2005-09 to this year's QAQC data. Monitoring Team members did not think that would be an issue.

Brian Karas of the monitoring team said he is frustrated, as there has not been an opportunity to discuss some potential critical redesigns in the method. There are critical methodological issues to be discussed.

Next Steps:

- The power analysis will be reviewed and discussed at a conference call meeting on August 11 from 10 a.m. to noon Pacific Standard Time. An additional conference call meeting may be held after that for further consideration of the QAQC Study program for the 2011-12 bird year starting in October.
- The SRC will also consider QAQC for the 2011-12 bird year at a two-day in-person meeting September 26-27.

enXco FloDesign Avian Safety Study Proposal

Related Documents

[P213 Alameda County Memo to SRC FloDesign enXco Research Project](#)

[P214 FloDesign Avian Validation Plan](#)

[P218 enXco 7-21-11 Presentation on Patterson Pass](#)

[P219 FloDesign 7-21-11 Presentation on Avian Safety Validation Project](#)

FloDesign and enXco representatives gave a presentation on an experimental turbine design. They are proposing to install 10 of the FloDesign MEWT turbines at enXco's Patterson Pass site to test their impact on avian safety. They sought direction from the SRC on whether the SRC thought the study might be worthwhile, and whether to return with a formal study plan for review.

Josh Lazarus of enXco Development gave a presentation on the Patterson Pass site (see [P218 enXco 7-21-11 Presentation on Patterson Pass](#)), a 1000-acre wind farm owned by enXco that now has 319 operational turbines.

John Howe, Public Affairs Director for FloDesign, gave a presentation (see [P219 FloDesign 7-21-11 Presentation on Avian Safety Validation Project](#)) on the turbine design and plans for the avian safety trial. He asked SRC members to give their thoughts on whether the company seems to be on the right track. The company wants to take the right approach to get a scientifically valid conclusion, and if it is not on the right track, it would like to know early. The company has been talking with Shawn Smallwood to undertake the research, but no agreement has yet been entered into.

SRC Questions and Initial Comments

SRC members asked the following questions and made the following comments:

- It might be possible for the company to test the impact of the turbines on pigeons in its wind tunnel, both in terms of fatalities and pigeon behavior
- The design looks like it might be an attractive perch for birds. In response, John Howe said perching did not appear to be a problem with prototypes, but it is one of the issues the company wants to look at in the study. A possibility, if it does not compromise the aerodynamic benefits of the design, might be to place needles on top to prohibit perching.
- Is there a potential for birds to get sucked in? John Howe said that unlike a jet, the rotor design slows the wind. The company wants to look at the likelihood of birds flying into the gap in the design.
- The company needs to keep in mind that flight height varies between migrants and residents, and as a function of age of the birds
- It will be important to site the turbines carefully, not within a string of existing turbines, and far enough away, to avoid contamination from fatalities caused by other turbines.
- In response to a question about the length of the blades, John Howe said they are 70% smaller than typical blades.
- It might be helpful to place the sample turbines at the density they would normally be placed. An interesting question will be if density is inversely related to mortality.
- 10 turbines will unfortunately not produce much data. It will be important to supplement with behavioral data. A critical question will be whether birds are repelled by the design, or can perch anywhere.

Sandra Rivera of Alameda County said the number of turbines to be placed is limited by the existing conditional use permit. This number of turbines can be considered a research project, but more turbines would be considered repowering.

SRC Response to Presentation

SRC members said the design looks like a great idea and supported the company returning with a study design for SRC review.

Public Comment

Mike Morrison said it looked like a great idea. The company needs to get design approval quickly, because pre-treatment data needs to be collected before installation. Sampling should start at the end of this year.

Shawn Smallwood said he has suggested to the company that it go for broke and try to get a signal by installing turbines at one of the most dangerous sites.

Detailed Implementation Plan (DIP) for 2011-12 Bird Year

Doug Leslie of the Monitoring Team said the Team will once again be developing a Detailed Implementation Plan (DIP) for the upcoming bird year, which will identify turbine strings to be monitored. As the SRC agreed, 60% of monitored turbines are fixed, while 40% result from a rotating panel design. The Monitoring Team needs to make sure that it is not sampling any turbines that will be removed during the bird year, or which will be the subject of special studies. This item is a call to the wind companies to begin gathering turbine information to provide so that the team can develop the DIP. There will be no changes to the protocol this year. As with last year, the Monitoring Team will circulate to the SRC a spreadsheet and map showing the turbines to be monitored.

Public Comment

Renee Culver of NextEra asked if the Monitoring Team would need to address now or at the next meeting any changes to the protocol produced by SRC recommended changes to the QAQC Study. Doug Leslie said it shouldn't change, and if the Team went to a two-week search interval, there should be ways to accomplish that within the same cost framework by rotating focus areas.

Next Steps

- Once the Monitoring Team has developed dates for the DIP process, Sandra Rivera of Alameda County will circulate a Monitoring Team memo to the wind companies on the information being sought.

Other Monitoring Team Study Options

Related Documents

[P210 SRC Study Plan for Burrowing Owl Pilot Behavior Study](#)

[P211 SRC Burrowing Owl Survey Protocols](#)

[P195 SRC BUOW Cost Estimate Sheet](#)

[P194 SRC Burrowing Owl Behavior Pilot Study Proposal](#)

[P162 Smallwood & Neher Tres Vaqueros Repowering Siting](#)

[P203 SRC Revisions to M67 Burrowing Owl Hypotheses](#)

[P215 Alameda County Memo on Other Study Options](#)

[P216 Smallwood Proposal for Follow-up Burrowing Owl Distribution and Abundance Research](#)

Background:

Once a Monitoring Team field worker is no longer participating in the NextEra study, which is expected to end in early July, one FTE will be available for other study work. The SRC in February had recommended, as part of a multipronged recommendation on burrowing owls, that the third of three priorities be undertaking a summer set of behavioral observations as detailed in [P194 SRC Burrowing Owl Behavior Pilot Study Proposal](#) to assess the utility of techniques for later research. At a July 5 conference call meeting, Shawn Smallwood and NextEra representatives had urged that priority be given instead to digitizing data recently collected by the Monitoring Team on bird behavior.

Facilitator Mary Selkirk said, on a conference call after that with participants Renee Culver of NextEra, Shawn Smallwood, the Monitoring Team, Sandra Rivera and herself, the Monitoring Team and Shawn Smallwood determined that digitizing the behavior data would cost only \$7000 and could be covered by the existing Team budget. On that call, Shawn Smallwood proposed some additional work be prioritized on burrowing owl distribution and abundance. His latest proposal, detailed in [P216 Smallwood Proposal for Follow-up Burrowing Owl Distribution and Abundance Research](#), describes three possible tasks, including continuing to track burrowing owl distribution and abundance continuously through February (Task 1).

The burrowing owl behavior pilot study plan, [P210 SRC Study Plan for Burrowing Owl Pilot Behavior Study](#), has been updated to incorporate information on ways it could help with siting of repowered turbines, and a list of quantitative metrics, such as flight height and distance from turbine, that it could produce.

SRC Discussion

In discussion, SRC members raised the following points:

- One SRC member said the extent to which data from the behavioral study would be used quantifiably to really inform repowering, in his mind, is questionable. He doesn't believe information about height would result in changes to repower turbine designs. Other items might have a higher priority for him. There is not enough known about burrowing owl distribution and abundance during the winter.
- The behavior pilot study is not season-specific, but would need to occur before repowering in order to inform it. NextEra representatives said repowering is now in process.
- The Smallwood proposal suggests that one study spawns options for other studies, and the behavior study has not had that opportunity.
- It was also suggested that the burrowing owl study might reveal behavior or habitat use that should be taken into account with repowering, and that one purpose of the pilot study is to be open to possibilities.
- The pilot study in itself is not necessarily expected to provide answers about burrowing owl behavior, but rather to inform the consideration of a full scale study.

Presentation on Preliminary Results of Burrowing Owl Distribution and Abundance Study

Shawn Smallwood, who is conducting the burrowing owl study with one Monitoring Team searcher, discussed the preliminary results and his recommendations for continued research.

Preliminary results include:

- The degree of change in distribution over time that the researchers have recorded was unexpected.
- Burrowing owls appear to be distributed unevenly across the landscape with many apparently suitable sites unoccupied.
- Searching is easier early in the spring, before grass grows, and later, after livestock have grazed. In between, it can be quite difficult to detect burrows and owls.
- 500 pairs were identified, which would translate to a range of 280-720 with standard error. He is comfortable that the true estimate is close to the mean.
- Density can vary from zero to very high.
- Some places that had high burrowing owl populations do not any longer. A Vasco Caves site that had 13 pairs in 2007 has one this year.
- Factors include ground squirrel population shifts, which can be brought about by land management techniques such as poisoning and shifting to sheep grazing, which causes the growth of perennial bunch grasses, which ground squirrels don't seem to like.
- Burrowing owl nests were found right under towers, and on the ground within lattice towers.
- Distribution and abundance was even dynamic in the springtime. One example is a nest that had six chicks; all are now gone through predation. Because of this, the estimates from June through July could not be used to characterize the situation in April through May.
- Now, fledglings are beginning to move around and occupy burrows peripheral to the natal colony. He suggests continuing to map burrows. The value will be in tracking fledgling burrows, as he expects a different distribution and roost profile. It would give us one year of data.
- There are some areas with zero burrowing owls, even though there are lots of ground squirrels. He has no explanation, except that populations tend to cluster. If there are no ground squirrel burrows, there will be no burrowing owls to a large extent.
- He is looking to model burrowing owl distribution and abundance based on slope features. He hopes to eliminate noise by eliminating the areas without ground squirrels. Ground squirrels could be measured from the air or on the ground with GPS. He recommends both.
- Only one owl fell outside his model predictions for burrow locations.

SRC Questions and Comments

SRC members raised the following points and questions:

- Didn't a Smallwood NREL study also map burrow distribution? Shawn Smallwood responded that the study only looked 80 m out from turbines, and not many were found.

- There might be some value in identifying individual birds by banding.
- How will this data help if the biology or habitat use will be different 10 to 15 years from now? This is where behavioral data could help inform where they will nest.
- In response to a question, Shawn Smallwood said the goal with ground squirrel distribution data is to develop a predictive model about where they might be in the future.
- To save money, perhaps rather than getting the entire distribution of ground squirrels, the number of burrows in a particular area could be counted. Another SRC member suggested that distribution would be needed to refine the plot.
- A challenging aspect would be if the predictor of ground squirrel distribution is range management.

Sandra Rivera of Alameda County asked if there are any repowered sites that could be looked at to show fatalities for repowered turbines initially and 15 years later. Shawn Smallwood said the only sites are Diablo Winds and Buena Vista.

Public Comment

Renee Culver of NextEra asked if continued studying would provide an idea of the burrowing owl population flux over the year. Shawn Smallwood responded that it would, as long as the owls could be detected. He doesn't know to what extent they will be detectable during the winter. She said she is worried about the ground squirrel issue, as they are everywhere, and populations shift. A cost effective alternative might be to do a GIS cluster analysis around known fatalities. The SRC should take into consideration that QAQC changes could impact the budget available for other studies. She also wants to make sure that sufficient resources are devoted to getting answers on at least one study. She wouldn't want issues in both studies, so that neither could be used.

Mike Morrison said the goal, focus and design is good. In a Texas study on another species that he did, his group found that clusters are clustered. He used a Bayesian network model to identify where the species can't be and could be. Rather than providing yes/no answers, it provided no/perhaps answers that could then be field examined. A decision tree could be developed.

SRC Consideration of Next Steps for Other Studies

One SRC member suggested perhaps it might be possible to undertake continued distribution and abundance sampling, but also take a strategic break to do the behavior pilot study. Another SRC member said researchers would miss the fledglings they have been tracking if they take a break.

Doug Leslie of the Monitoring Team said he didn't think it would work to try to do both studies at once. He suggested that Shawn Smallwood's recommended Task 1 in P216 be done with equal intensity to the existing burrowing owl distribution and abundance sampling.

Two SRC members supported prioritizing Task 1, with the same level of effort as is currently occurring. Depending on decisions made later about the QAQC Study, the SRC

could look at conducting a burrowing owl behavior pilot in the fall. It's important not to have a month of missing data and to be able to track breeders and young.

A third SRC member agreed, saying this would be congruent with the SRC's previous decision to prioritize distribution and abundance over behavior. It would be better to move forward with the pilot study when it is clear that there would be funds available for full-scale follow-up studies to the pilot study.

A fourth SRC member supported the ordering of priorities identified by other SRC members.

SRC members did not prioritize Shawn Smallwood's recommended Task 2 and Task 3 in P216.

Public Comment

Mike Morrison agreed with those supporting prioritizing continued distribution and abundance sampling. He strongly disagreed with undertaking the behavior study for one month, as he wants to discuss the methods, because he has ideas about ways to expand the study and enhance it to get results. He thinks more funds would be needed in order to do so.

SRC Recommendation on Other Monitoring Team Studies

The SRC prioritized and recommended burrowing owl studies as follows:

- Continuation of the current burrowing owl distribution and abundance surveys through December 2011 and ideally through February 2012 (Task 1 of P216 Shawn Smallwood proposal presented at the meeting).
- Pending available resources, proceed with the burrowing owl behavioral pilot study.

Future SRC Meetings

Conference Call Meeting:

- **August 11, 2011**, 10 a.m.-Noon. **Topic:** QAQC Study power analysis

In-Person Meeting

- **September 26-27, 2011. Topics:**
 - QAQC Study
 - Goals & objectives for the next bird year
 - EIR

Documents Circulated at Meeting

[M80 QAQC Study Preliminary Report](#)

[P213 Alameda County Memo to SRC FloDesign enXco Research Project](#)

[P214 FloDesign Avian Validation Plan](#)

[P210 SRC Study Plan for Burrowing Owl Pilot Behavior Study](#)

[P211 SRC Burrowing Owl Survey Protocols](#)

[P195 SRC BUOW Cost Estimate Sheet](#)

[P194 SRC Burrowing Owl Behavior Pilot Study Proposal](#)

[P162 Smallwood & Neher Tres Vaqueros Repowering Siting](#)
[P203 SRC Revisions to M67 Burrowing Owl Hypotheses](#)
[P215 Alameda County Memo on Other Study Options](#)
[P216 Smallwood Proposal for Follow-up Burrowing Owl Distribution and Abundance Research](#)
[M81 QAQC Study Interim Report 7-21-11 Presentation Slides](#)
[P218 enXco 7-21-11 Presentation on Patterson Pass](#)
[P219 FloDesign 7-21-11 Presentation on Avian Safety Validation Project](#)
P100_SRC Document List with Reference Numbers

SRC Meeting Participants

SRC Members Days 1 & 2

Joanna Burger
Jim Estep
Sue Orloff
Julie Yee

Staff

Sandra Rivera, Alameda County, Days 1-2
Mary Selkirk, Facilitator, Days 1-2
Ariel Ambruster, Associate Facilitator, Days 1-2

Monitoring Team

Chris Brungardt, Day 1
Doug Leslie, Days 1-2
Jesse Schwartz, Days 1-2
Brian Karas, Days 1-2

Others

(Meeting sign-in is optional)

Renee Culver, NextEra, Days 1-2
Kris Davis, Counsel for AES and enXco, Day 1
Chris Dreiman, enXco Service Corp., Day 1
Emre Ergas, NextEra, Day 1
Jim Hopper, AES/SeaWest, Days 1-2
John Howe, FloDesign, Day 1
Josh Lazarus, enXco Development, Day 1
Mike Morrison, Texas A&M, Days 1-2
Shawn Smallwood, Days 1-2
Joan Stewart, NextEra, Days 1-2

List of SRC Agreements Developed July 21 & 22

(Compiled from this document)

SRC Recommendations on QAQC Study

The SRC made the following recommendations:

- That the Monitoring Team continue with the current methodology for the remainder of the 2010-11 bird year.
- SRC Member Julie Yee and the Monitoring Team will evaluate the statistical power of the current level of the QAQC design and conduct a power analysis to determine the level of effort needed to produce cumulative detection probability estimates.

SRC Recommendation on Other Monitoring Team Studies

The SRC prioritized and recommended burrowing owl studies as follows:

- Continuation of the current burrowing owl distribution and abundance surveys through December 2011 and ideally through February 2012 (Task 1 of P216 Shawn Smallwood proposal presented at the meeting).
- Pending available resources, proceed with the burrowing owl behavioral pilot study.