

Meeting Summary | September 26-27, 2011 Altamont Scientific Review Committee

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

All SRC Members Present:

Joanna Burger
Jim Estep
Mike Morrison
Sue Orloff
Julie Yee

Key Outcomes

1. Monitoring Report

The SRC accepted M73, the 2005-2009 Monitoring Program Final Report.

2. Seasonal Shutdown and Guidance to Alameda County

Guidance to Alameda County on the scientific issues relevant in considering the AWI request for a seasonal shutdown waiver for the 2011-12 winter season.

As Alameda County weighs the AWI request for a 2011-12 seasonal shutdown waiver, the County should consider the following scientific issues:

1. Per the Monitoring Team September 2011 Final Report (M73), implementation of seasonal shutdowns has been successful in reducing red-tailed hawk winter fatalities by more than half (from 35% of annual fatalities in 2005 to 15% in 2009).
2. Other species (American kestrel, burrowing owl, golden eagle) show no clear signal of either reduction or increase in fatalities during seasonal shutdown.
3. Issuing a waiver to AWI for the 2011-12 season could increase bird fatalities because of the intermixing of operating and non-operating turbines in close proximity, thus potentially erasing any gains from seasonal shutdown.
4. Allowing for a waiver for AWI would make analysis of seasonal shutdown avian fatality reduction and overall annual fatality reduction extremely difficult.
5. If Alameda County were to issue a waiver to AWI, the SRC concludes that the entire Monitoring Program design would need to be reconsidered in light of the fact that AWI turbines are interspersed throughout the Altamont Pass Wind Resource Area with other turbines subject to the seasonal shutdown requirement.
6. Since there is a measurable positive effect from seasonal shutdown on reducing red-tailed hawk fatalities, supporting the issuance of a waiver would violate the mission of the SRC.

AWI did not have the most recent analysis of red-tailed hawk fatality declines with seasonal shutdown when the company made its request. The SRC acknowledges that

AWI's request for waiver on seasonal shutdown was submitted before the Monitoring Team's September 2011 Final Report was published.

3. QAQC Study

The SRC approved the "hybrid" recommendation for QAQC proposed by the Monitoring Team, to be implemented through the end of 2011.

Key components of this recommendation include:

- Carcasses will be left out for 90 days
- Carcasses will be fresh, small raptors with the aim of achieving a total of 50 carcasses by the end of 2011
- The study would involve three groups of 50 turbines
- Searches would occur on Days 1, 15, 30, 60 and 90
- The study would abolish field manager post searches and replace with status checks

4. enXco FloDesign Work Plan

The SRC approved the proposal as outlined in P223 Smallwood FloDesign Study Design, with a recommendation that the study include collection of behavioral data at the following points: the transition from operation to non-operation at the beginning of winter shutdown; at some point during the winter shutdown; and during the transition from non-operation to operation at the end of winter shutdown.

5. Goals and Objectives for 2012

The SRC considered Monitoring Program goals and objectives going forward, in the context of the transition to a repowered APWRA environment, and recommended the following:

- Continue to measure success toward a 50% reduction of fatalities
- Investigate burrowing owl fatalities
- Assess the feasibility/utility of deriving a conversion factor to relate the current Monitoring Program methods to a repowered turbines monitoring protocol

Action Items & Meeting Follow-Up

Party	Due Date	Action
SRC	February 16-17, 2012	In-person meeting (2 days)
Sandra Rivera		Will communicate the hazardous turbine issue in FloDesign study to the other settling parties to see if it is a concern to them.
Shawn Smallwood		Will communicate with Audubon and CARE representatives to make sure they are aware of the high risk turbine issue relative to the FloDesign study.
Sue Orloff		Will consider developing a conceptual model and hypothesis to use in analyzing the data.

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Meeting Account

Announcements & Updates

Sandra Rivera of Alameda County reported that the number of wind turbines included in the DIP for the 2011-2012 bird year has decreased by 53 turbines, including turbine strings wind companies have decided are not economical to keep running.

Update on Monitoring Team Activities

Doug Leslie, Monitoring Team Project Manager, reported the following:

- Monitoring is proceeding on schedule and according to protocol.
- The changes to the QAQC Study are being implemented
- One member of the Monitoring Team is working on the burrowing owl distribution and abundance study with Shawn Smallwood
- The Team is finishing up the Detailed Implementation Program (DIP) for the 2011-12 bird year. The Team has gotten information from NextEra and enXco and coordinated with Shawn Smallwood. It should be distributed in one week. The Team has been working with the wind companies to identify turbines that are expected to be removed in the coming year, so they will not be included in monitoring.

Monitoring Team Revised Final Report

Related Documents

[M73 2005-10 Monitoring Report](#)

[M82 Altamont Monitoring Report September 2011 Presentation Slides](#)

Monitoring Team Project Manager Doug Leslie gave a presentation on the final 2005-09 Monitoring Report (M73). With this document, the reports are caught up. The team's goal is to incorporate bird use data in the next draft report. Shawn Smallwood has a contract with the Monitoring Team to enter that data through September 2011.

In reviewing the report, Doug Leslie and Monitoring Team member Jesse Schwartz highlighted the following issues:

- A difference in this report from previous reports is that fatalities were estimated on the BLOB (base layer of operating group boundaries) unit. Blobs are stratified by geography and turbine type.
- Table 2-3 was added at the request of one of the SRC members to show removal of tier and hazardous rated turbines for each year. It is interesting that the magnitude of these removals is small in comparison to the number of turbines removed through attrition.
- Adjusted fatality rates, in Figure 3-4, show a similar pattern among all four species. There was a large spike in fatality rates for small raptors in the 2006 bird year.
- Figure 3-6 shows trends in the three-year rolling average of adjusted fatality rates for the four species. Large raptors are showing a linear decrease, while small raptors show a different pattern.
- The estimates show wide variance and low power, because of high uncertainty. Numbers should not be lifted from the report and used for forecasting, and this needs to be made clear.
- Table 3-13 extrapolates Diablo Winds fatality rates to the rest of the Altamont to give an idea of what fatality rates might be under repowering.
- As far as **performance towards achieving the 50% reduction** in fatalities, the Monitoring Team showed a PowerPoint slide summary (see M82) with the following information:
 - There is an overall reduction of 24% [from the 2005-2007 rolling average to the 2007-2009 average (ref. Table 3-10)]. Figures for the four focal species are:
 - Golden eagle, 48% reduction
 - Red-tailed hawk, 48% reduction
 - Burrowing owl, 41% reduction
 - American kestrel, 5.1% increase
- In regard to the **impact of seasonal shutdown**, the Monitoring Team showed a PowerPoint slide with the following information: there is evidence of an effect on red-tailed hawks, as the proportion of annual fatalities in winter is declining over time at turbines participating in seasonal shutdown (non-Diablo Winds turbines only). There is no clear evidence of an effect on the other three species.
- The report **concludes** that there is increasing evidence of a reduction in raptor fatalities in the APWRA since 2005, as installed capacity declined, hazardous turbines were removed and portions of the APWRA were repowered; there is some evidence

to support the hypothesis that winter shutdown has resulted in a decrease in large raptor mortality, especially for red-tailed hawks; and there is evidence that repowering the APWRA would substantially reduce raptor mortality per megawatt.

SRC Discussion

In discussion, SRC members raised the following issues:

- Although the next full written report will not be available before the expected early December SRC meeting, it would be helpful if the Monitoring Team had summary statistics to present on central issues, such as fatalities.
- It would be helpful if the reports explain how known sources of variation were handled, and explicitly state when unknown levels of other known sources of variation were left unknown. Such sections should be clearly labeled with a heading.
- In addition, every graphic should be able to stand alone, or refer to a specific location in the report where the reader can find further information.
- In Table 2-4, it would help if terms such as "not turbine-related" are defined.
- One SRC member questioned the rolling average analysis, saying it might obscure information due to the overlap in averaging years, and because base metrics such as turbine types and numbers are changing so much. Other data need to be taken into consideration in order to interpret the graphic. A member of the Monitoring Team and another SRC member said the intent of the three-year rolling average, agreed to earlier by the SRC, was to smooth out annual variation and give an indication of a general pattern.
- One SRC member said that variance should be expected to decrease as monitoring continues, as management actions are completed.
- Figure 3-8 and 3-9, presenting the relationship between the number of winter fatalities and total annual fatalities, are confusing. It is better to aim for simplicity and to make sure that the meaning of the graphic is clear. It would also be helpful to compare winter season with the rest of the year, or other seasons, rather than the entire year including winter.
- The data may be indicating the need for a policy decision, rather than a science decision, when evidence shows that one species is helped by a management action, but others are not.
- In regard to the use of the word "substantially" in conclusion #3, some SRC members said they might not make as strong of a statement. Others supported the terminology. One SRC member said it reflects the magnitude of difference in the rates between Diablo Winds and non-Diablo Winds turbines.
- Two SRC members said, in future reports, they would recommend against using the word "increasing" in the conclusion, as it is not clear what the increase is relative to.
- In regard to the conclusions, one SRC member said it could be stated that fatalities for two of the four focal species declined dramatically, but we continue to have problems with small raptors.

- Given the uncertainty of the data, going forward, it would be helpful to make the conclusions as simple as possible, and only present what is clear and obvious.

Public Comment

Members of the public noted the following issues:

- There seems to be an issue in the graphs for adjusted and non-adjusted fatalities (Monitoring Team will look at this).

Shawn Smallwood said that in regard to the word "substantially" in conclusion #3, the reduction at Diablo Winds would be larger if comparisons were made with the FloDesign turbines that were replaced. Three years of monitoring at the Buena Vista project have shown that reductions in fatalities are substantial, in the range of 75-80%, and there have been no burrowing owl fatalities in three years. Buena Vista monitoring used a different methodology than that used at the APWRA, making it more difficult to compare the information. Repowering is not only about size, but the opportunity to resite turbines using criteria such as the SRC's relocation guidelines (P70). Even Buena Vista is not sited as carefully as it could be now.

In response to a question about bat fatalities at Buena Vista, Shawn Smallwood said methodologies for bat fatalities are poor at this point, but species numbers in this region are much lower than those in the East and Midwest, where bat fatalities have been a problem. In regard to the bird use data that he is developing, he cautioned that it may not be so easy to use. Some species, such as red-tailed hawks, show seasonal patterns more so than interannual patterns. And the use surveys were not appropriate for burrowing owls.

Ryan McGraw of AWI asked for a quick paraphrase from the Monitoring Team of the impact of seasonal shutdown on each species. In response, Team members said there is strong evidence of an effect for red-tailed hawks, but effects on the other three species are not clear.

SRC Review and Conclusions on the Efficacy of Seasonal Shutdown

SRC members discussed the Monitoring Report's conclusions on seasonal shutdown, to assess the evidence of the effectiveness of the management action towards reducing fatalities of the four focal species. The following points were raised:

- There has been a clear decline in red-tailed hawk mortality
- There is no clear signal of an increase or decrease in fatalities for other focal species
- The seasonal variation in the abundance of focal species is unknown, making it difficult to assess declines

- Complications with other species include a small sample size for golden eagles, and the high percentage of burrowing owl fatalities found as feather spots
- There is such a high degree of variation in natural mortality that it often overshadows the effect of a management action
- The question of compensatory effect has not yet been resolved. The best way to look at the issue would be to examine the trend in winter rates in comparison to rates for the rest of the year excluding winter, and see if the slopes are the same. The analysis would be confounded by the fact that other management actions are also taking place.
- While there is no definitive evidence for some of the species, the fact that there is clear evidence for one species means the management action would be considered to be effective.

Monitoring Team members noted that the impact on red-tailed hawks became visible after the crossover shutdown design ended and universal shutdown was implemented.

SRC Guidance on Seasonal Shutdown in Relation to AWI 2011-12 Waiver Request

Related Documents

[P225 Alameda County - SRC Guidance on AWI 2011-2012 Seasonal Shutdown Waiver](#)

Sandra Rivera of Alameda County said that AWI, the only non-Settling Agreement company, has submitted a request for a permit modification. Alameda County is conducting environmental review on the request, which would include a complete exemption from seasonal shutdown and phasing of shutdowns. In the meantime, AWI is asking for a waiver from the requirement to participate in the upcoming seasonal shutdown. Currently, the shutdown is 3.5 months for all the wind companies. Alameda County is asking the SRC to look at the scientific considerations and provide a recommendation to the County on its assessment of seasonal shutdown.

SRC Discussion

In discussion, SRC members raised the following issues:

- Because AWI turbines are interspersed with other turbines, in particular wind walls with mixed ownership within them, it would be extremely difficult to analyze the impact of seasonal shutdown on the APWRA if the exemption was granted.
- If seasonal shutdown is stopped for a proportion of the turbines, it would be reasonable to suspect that the substantial reduction in red-tailed hawk mortality that has been achieved would be lost, or potentially could be reversed because of intermixing of on and off turbines.
- The SRC has a mandate of reducing mortality within the context of keeping Altamont viable. Recommending in support of the waiver would be counter to that mission.

Comment from AWI

Ryan McGraw of AWI said he is happy to field questions. For AWI, the science is just one piece, and the company is looking at this as a balancing act: are we getting a benefit, and what is the cost? The company is losing 90 MW of clean energy annually, which is giving up \$700,000 a year. The exemption would help keep people employed. The new Monitoring Report is providing a clearer picture of the information about red-tailed hawks that wasn't available before. AWI is looking at the biology and making an informed decision on whether the benefits to the birds is so strong that it's worth losing the societal benefit of clean energy and some jobs.

In response, SRC members noted that they are only looking at the scientific element of the question, and other elements related to policy would be considered in other Alameda County venues.

Continued SRC Discussion

SRC members raised the following issues:

- In the AWI August 4, 2011 letter included as part of P225, point #4 is based on an unpublished internal report. From a scientific standpoint, SRC members can't consider the information because it has not been published and peer-reviewed. In response, Ryan McGraw said that AWI is looking at two different journals to submit the report to.
- If cost-benefit ratios are going to be considered, the cost of raising a species to be released into the wild should also be taken into consideration.
- If the shutdown waiver increased mortality, it might not be possible to measure that impact for any focal species.
- Given the evidence of the reduction in red-tailed hawk mortality, and an unclear signal for other species, it makes sense to continue seasonal shutdown
- With the Monitoring Program's incorporation of a rotating panel sampling scheme, a different seasonal shutdown scenario might require a change in the entire Monitoring Program. Alameda County needs to know what the risk is and that it could have a cascade to the entire program.
- If the waiver was granted, perhaps the SRC might recommend that other companies don't shutdown, as a mixed environment could confuse birds and be worse for them than having all turbines on.

Public Comment

Bob Power of Santa Clara Valley Audubon Society said his group looks to the SRC for its recommendation and agrees with SRC members' perspectives.

SRC Recommendation on AWI Request for a 2011-12 Seasonal Shutdown Waiver

SRC members developed the following recommendation:

Guidance to Alameda County on the scientific issues relevant in considering the AWI request for a seasonal shutdown waiver for the 2011-12 winter season.

As Alameda County weighs the AWI request for a 2011-12 seasonal shutdown waiver, the County should consider the following scientific considerations:

1. Per the Monitoring Team September 2011 Final Report (M73), implementation of seasonal shutdowns has been successful in reducing red-tailed hawk winter fatalities by more than half (from 35% of annual fatalities in 2005 to 15% in 2009, based on Figure 3-10 regression trend).
2. Other species (American kestrel, burrowing owl, golden eagle) show no clear signal of either reduction or increase in fatalities during seasonal shutdown.
3. Issuing a waiver to AWI for the 2011-12 season could increase bird fatalities because of the intermixing of operating and non-operating turbines in close proximity, thus potentially erasing any gains from seasonal shutdown.
4. Allowing for a waiver for AWI would make analysis of seasonal shutdown avian fatality reduction and overall annual fatality reduction extremely difficult.
5. If Alameda County were to issue a waiver to AWI, the SRC concludes that the entire Monitoring Program design would need to be reconsidered in light of the fact that AWI turbines are interspersed throughout the Altamont Pass Wind Resource Area with other turbines subject to the seasonal shutdown requirement.
6. Since there is a measurable positive effect from seasonal shutdown on reducing red-tailed hawk fatalities, supporting the issuance of a waiver would violate the mission of the SRC.

AWI did not have the most recent analysis of red-tailed hawk fatality declines with seasonal shutdown when the company made its request. The SRC acknowledges that AWI's request for waiver on seasonal shutdown was submitted before the Monitoring Team's September 2011 Final Report was published.

Next Steps

- Seasonal shutdown would start November 1. The East County Board of Zoning Adjustments meets October 28 to consider the AWI waiver request.
- Alameda County staff will take all of the information into consideration. The staff report for the October 28 meeting should be available a week before the meeting.
- Because of the tight timing, if the waiver is granted, Sandra Rivera will notify the SRC to hold an immediate conference call to consider seasonal shutdown.

Meeting Summary Approval

Related Documents

[P196 SRC Meeting Summary December 2010](#)

[P208 SRC Meeting Summary June 2011](#)

[P212 SRC Call Notes 7-5-11](#)

[P217 SRC Meeting Summary July 2011](#)

[P221 SRC Call Notes 8-11-11](#)

SRC members approved the draft meeting summaries without any changes.

Final Determination on QAQC Study for New Bird Year Commencing October 2011

Related Documents

[P222 Yee More QAQC Simulation Analyses](#)

[M83 Small Raptor Probability of Removal Analyses](#)

At its July in-person meeting and on an August 11 conference call meeting, the SRC considered the QAQC Study and whether to continue the study into the first three months of the new bird year, which starts in October. SRC Member Julie Yee and members of the Monitoring Team have been working to analyze data to identify whether a QAQC Study continued into the new bird year and focused exclusively on small birds would develop enough data to be able to answer with sufficient precision what the detection probability is for small birds. The QAQC Study is estimated to have data on 20-25 carcasses during its first year. Monitoring Team members believe they could develop information on an additional 25 carcasses in the next three months, because this is the time of year with higher avian populations.

SRC Member Julie Yee introduced the day's discussion. She and the Monitoring Team have been working to determine if data support the more shallow decay rate discussed in her P207 simulation paper, versus the currently used decay rate, which has been called the Smallwood curve, as it was developed by Shawn Smallwood. If carcasses decay at that shallower rate, the Monitoring Team would have more carcasses that persist longer, possibly allowing for more data with which to estimate detection probability and more power than would be expected under the Smallwood curve, particularly if only 25-50 carcasses are available for the QAQC Study.

Jesse Schwartz of the Monitoring Team said SRC Member Sue Orloff has found the records from her original study, which will be added into this model. The data available so far supports use of the new curve (See [M83 Small Raptor Probability of Removal Analyses](#) for his analysis). Previously, it was assumed that the percentage of carcasses persisting for one month was close to zero, and under the new curve, it would be much larger.

Julie Yee agreed with Jesse Schwartz's assessment that the curve likely has a shallow decay rate. She reviewed the results of her simulations ([P222 Yee More QAQC Simulation Analyses](#)) which include figures of the variation of estimation error expected from a range of sample sizes of carcasses left out for 90 days. The SRC considered whether or not to support the goal of monitoring a total of 50 carcasses, assuming the shallow curve, although there is still a lot of error variation with a sample of 50.

Brian Karas of the Monitoring Team and Shawn Smallwood said the existing small bird adjustment factor is based on a small number of bird carcasses monitored for seven days, taken from the emergent outcomes of Sue Orloff's 1992 two-year study in the APWRA.

Jesse Schwartz proposed continuing the QAQC Study for the next three months, saying he believes it would be doable to work up to a total of 50 records of carcasses during that timeframe. The protocol would be altered to leave carcasses out for 90 days. One possibility would be to work with Shawn Smallwood on the FloDesign study he will be doing at

Patterson Pass, to make that one of the sites. There would be a total of three sites of 50 turbines each, which would cut the level of effort for the QAQC Study in half for the next three months.

SRC Discussion

In discussion, SRC members raised the following points:

- Would the effort be sufficient to improve the estimate, as the simulations show less definitive answers from 50 carcasses and a large amount of variability? The simulations show a better estimate with 100 carcasses (Figure 21 of P222). In response, Brian Karas of the monitoring team said leaving the carcasses out for 90 days will make a huge difference. Today, carcasses have only been left out for one rotation. This should increase the accuracy of the curve, as searchers will get multiple opportunities for detection.
- Could the Monitoring Team provide an update towards the end of the year on how good the estimate has to be and whether 50 carcasses is good enough? If not, either don't do the QAQC, or increase the effort. The SRC wants the data to be clear, with sufficient samples.

Public Comment

Renee Culver of NextEra said her company also has concerns about small bird fatality estimates.

SRC Recommendation on the QAQC Study

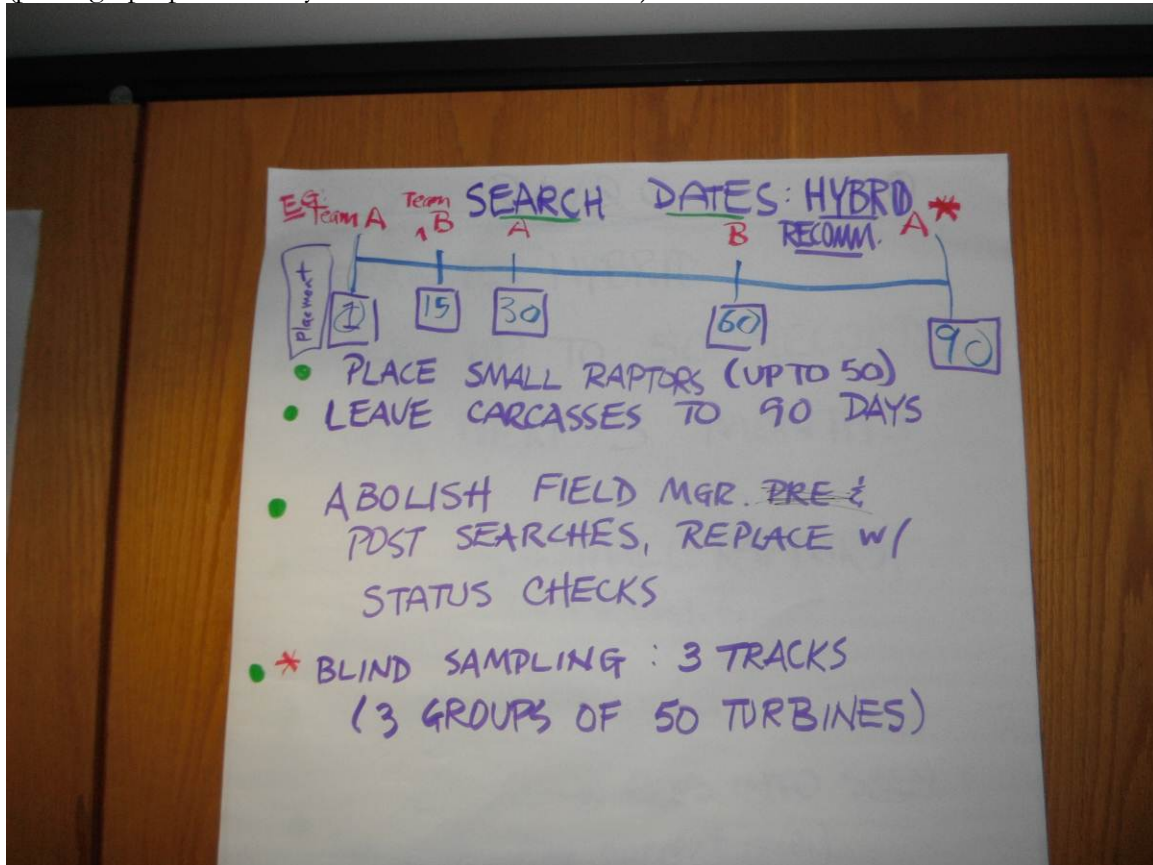
The SRC unanimously supported the following recommendation proposed by the Monitoring Team for continuation of the QAQC Study:

- The study should be continued through the first three months of the 2011-12 bird year, through the end of 2011. This would be half the cost of the existing QAQC Study
- The goal is to work up to a total of 50 records in the QAQC Study for small raptors
- The study will focus only on small raptors
- The interval will be two weeks
- Sampling will be blind
- Carcasses will be fresh, small raptors
- Carcasses will be left out for 90 days
- The study would include a total of three sites of 50 turbines each
- Searches would occur on Days 1, 15, 30, 60 and 90
- The study would abolish field manager post searches and replace with status checks

One SRC member qualified support for the vote with the addition that there be consideration of any follow-up when the SRC takes up the issue again in December and January.

Sue Orloff was asked to assist the monitoring team with acquiring small raptor carcasses at the rehabilitation Centers in the Bay Area.

The specifics of the SRC recommendation were captured in the following flipchart (photograph provided by Renee Culver of NextEra):



Doug Leslie, Monitoring Team Project Manager, said he hopes to get clear direction from the SRC on the goals and objectives of the Monitoring Program, which in the past has had the goal of answering the 50% reduction question, and comparing that to past years. A question for the SRC is whether an aggregate detection probability figure is needed each year because of interannual variation.

Next Steps

- The Monitoring Team can include in their report on the QAQC that there has been an analysis of level of effort and cost of the study

Public Comment

Renee Culver of NextEra asked if the Monitoring Team feels like the Altamont is in the ballpark of reaching 50%. In response, Doug Leslie said that depends on the definition. It is getting close for three of the four focal species. Renee Culver said that, therefore, the extra effort should increase confidence in the effects. If the 50% is not being reached, a question is whether money needs to be spent on getting a finer estimate.

Shawn Smallwood said, if the estimate is going to be refined, it is important to focus on small raptors, as they are the biggest analytical problem. The SRC's decision is focusing on the problem.

Joan Stewart of NextEra asked if the monitoring is going to result in new mitigation actions. In response, Sandra Rivera of Alameda County said it is a matter of closing the books and being able to say that the best job has been done on adjustment factors, so the Monitoring Team and the SRC can say something about small raptors that they couldn't say before. The estimates may not apply to NextEra, because it is doing repowering, but the estimates are needed for the other companies. Jesse Schwartz of the Monitoring Team said the QAQC Study could potentially change the 50%, because small raptors are a big factor in the calculation.

Consideration of Proposed EnXco FloDesign Avian Safety Study Work Plan

Related Documents

[P223 Smallwood FloDesign Study Design](#)

Sandra Rivera of Alameda County explained that, under the plan being considered, the SRC would oversee the research and review whether the turbine design is an acceptable technology to potentially reduce avian mortality, and whether it is something that Alameda County should use.

Shawn Smallwood, who would conduct the study, reviewed P223, the proposal for the FloDesign study at enXco turbines at Patterson Pass. The proposal is to do a 2 to 3 replacement of the FloDesign 100 kW turbines for the existing 65 kW turbines. They would be in rows of 10 in a fairly small field. There would be gaps to ensure that fatalities were assigned to the correct turbine. The study would be a trial with a very small sample of 10. Results would not be definitive, but would provide information to support a recommendation on whether the technology should be encouraged or discouraged. He will assume that the technology does well if it kills zero or 1-2 birds and no raptors, and would recommend moving forward aggressively if those are the results. An eagle fatality would be a game killer, from his perspective.

In response to SRC direction, he has coordinated with the Monitoring Team and developed a before/after control/impact design. The proposal includes monitoring existing turbines. There would be four groups, a replacement group before/after, and a control group before/after. He has selected high-risk sites, where he estimates about 15 birds are found each year. It would start February 15 2012 and end November 1 2012.

In terms of behavior, he will look at birds seen per hour, reaction to rotor wake and the front of the turbine, if birds are flying through rotor zones, and estimated flight heights.

One question is how to handle seasonal shutdown. He would recommend no searches in winter during the seasonal shutdown.

One SRC member suggested checking bird behavior in winter as the turbines are turned on and off, and another suggested checking for perchability of the turbines in the middle of the winter shutdown.

In response to a question, he said he is proposing a change to a 60-meter search radius. He has developed a method that he has written up, but it hasn't gone through peer review yet.

SRC Recommendation on the FloDesign Study

The SRC approved the proposal as outlined in P223 Smallwood FloDesign Study Design, with a recommendation that the study include collection of behavioral data at the following points: the transition from operation to non-operation at the beginning of winter shutdown; at some point during the winter shutdown; and during the transition from non-operation to operation at the end of winter shutdown.

John Howe of FloDesign said a real value of this study would be if it was independently administered. As a private company, FloDesign would not be perceived as independent. In order to remedy this, FloDesign is prepared to appoint an independent administrator, or establish an independent board of advisors. There is an interest in avoiding adding bureaucracy. What should FloDesign do to ensure that the study gains acceptance? If the study shows bird strikes, the company wants to know that up front, so it could introduce the technology for performance advantages but not for bird advantages.

Sandra Rivera of Alameda County said the research is taking place under the CUP, and a partnership with the SRC in Alameda County is proposed, under which enXco and FloDesign will pay the cost of the study, but it would be administered through Alameda County with input from the SRC.

In response, an SRC member said it seems the SRC is performing that independent role, as it has reviewed and approved the study design and will be monitoring the study. There is no need for another oversight entity.

John Howe said his company is prepared to fund the study up to \$250,000. It does not look as if funding would be available through PIER or the National Wind Technology Center. The company is interested if SRC members have suggestions for other potential funding avenues.

Josh Lazarus of enXco echoed John Howe's comments, adding that the technology is an alternative that enXco would like to research and consider.

SRC Discussion of FloDesign Study Hazardous Turbine Issue

One SRC member raised the issue that the pilot study would include erecting turbines in high risk areas where turbines were removed based on SRC recommendations of high-risk turbine ratings.

In response, John Howe said the company has made a commitment to remove the turbines if it is determined they are risky site locations. If not, the company hopes to incorporate them into a repowering plan. He has met with Mike Lynes of Audubon and reviewed the study.

Shawn Smallwood said two turbines were removed from the study area that were in the range of 8.5 to 10 ranking. In addition, two turbines are scheduled for removal, with a ranking of 8.

An SRC member concluded that the step is not introducing a large amount of potential mortality, but it needs to be clearly understood that the step is being taken and it is inconsistent with what the SRC has done.

Next Steps

- Alameda County will communicate the hazardous turbine issue in this study to the other settling parties to see if it is a concern to them.
- Shawn Smallwood will communicate with Audubon and CARE representatives to make sure they are aware of the issue.

Weather Analysis

Related Documents

[P227 Orloff Weather Presentation September 2011](#)

Sue Orloff of the SRC reported on the research she did on weather to examine whether there might be any correlation with the unusually high avian fatalities seen in the 2006 bird year. She found daily precipitation information for Livermore and the Tracy Pumping Plant. In her research today, she hasn't found any consistent trends. SRC members raised the following possible hypotheses for weather interactions:

- High rainfall in December leading to large insect populations in January
- High rainfall in previous years affecting rodent populations
- High rainfall affecting the amount of time burrowing owls spent outside versus in their burrow
- Birds might fly more if there is a low prey base

Action Items

- Sue Orloff will consider developing a conceptual model and hypothesis to use in analyzing the data.

Reflections on SRC Milestones

Related Documents

[P224 Summary of SRC Milestones June 2010-11](#)

SRC Discussion on Recent Milestones

Facilitator Mary Selkirk reviewed P224, the summary of SRC milestones since June 2010, taken from key outcomes SRC members developed at the end of each meeting. In addition, she identified key themes from telephone conversations she had with SRC members in summer 2011:

- Each SRC member identified as a goal going forward to focus on the changing landscape in the Altamont with repowering

- A couple SRC members hope to have a comprehensive burrowing owl study completed by the end of 2012, and have an understanding by that time of how monitoring is going to proceed in a repowered environment
- There was satisfaction with the level of discussion among SRC members and the Monitoring Team
- Some had concerns that interaction with the Monitoring Team detracted from SRC discussions.

She asked SRC members to comment on milestones that they feel are important. SRC members identified the following:

- The SRC has developed a much better relationship with the Monitoring Team
- The group developed a method for considering whether winter shutdown had an effect, and it did
- The rolling average will make it easier to identify the impact of management actions on avian fatalities
- The analysis has gotten beyond the comparison with the original baseline and baseline study

SRC Discussion on Aspects to Carry Forward to Future

Mary Selkirk asked SRC members how the group would like to move forward in the next couple years. SRC members listed the following items:

- Determine mortality at new turbines. A subset of this will be to identify the impacted species, and whether they are different than the focal species now. It will be important to be in the forefront before full repowering occurs.
- Participate in the development of how the Monitoring Program needs to be modified, including the question of the frequency of monitoring.
- Make sure there are no problems with comparability between the two monitoring programs.
- Consider a new search radius for the larger repowered turbines.

Public Comment

Zack Walton of NextEra said the Attorney General's Office settlement agreement calls for 30% of repowered turbines to be monitored every two weeks and the rest monthly.

In terms of comparability, Zack Walton said the issue of the 50% applies to existing turbines, not to new turbines. The data and analysis won't be applied to repowered turbines. Those involved in the Settlement Agreement struggled with how to evaluate the new landscape, as there will be no more strings. For example, in Contra Costa, NextEra has gone from hundreds of turbines to 34. He doesn't know how easy or difficult it will be to identify if one turbine is problematic. If there are a couple of turbines with disproportionate fatalities, is that significant? And there will be no relocation or seasonal shutdown, as the large capital investment requires longevity. There could be fine-tuning of operations.

In response to a question, he and Renee Culver of NextEra said that information is not currently available on the configuration of repowered turbines and their proximity to old generation turbines. They will provide that information as it becomes available.

Continued SRC Discussion on SRC Milestones

Sandra Rivera provided the following information about future issues and the Altamont environment:

- There will be a new CUP for the repowered turbines, and there may or may not be a role for the SRC. However, the SRC will have a role in the preparation of environmental review for repowering. A major element of the repowering EIR will be considering appropriate monitoring.
- The EIR will be developed in the next eight months.
- The environmental review process for repowering will include development of an Avian Bat Protection Plan.
- In 2012, there will be a lot of change. NextEra is looking at 80 MW, and enXco is planning repowering.
- Alameda County has not yet figured out whether achieving the 50% would still be a goal during the transition period after repowering.

SRC members raised the following issues:

- There will be old-generation turbines in the Altamont until 2018, but with fewer of these turbines, the SRC role will diminish in the next few years.
- Perhaps if there is two-week monitoring, the carcass could be left to evaluate at 30 days to look at correction factors.
- It would be neglectful not to calculate the reduction in fatalities from repowering.
- If the 50% goal does not apply, does it matter? Do people want to know if repowering has had an impact on avian fatalities?
- The goal should be identifying the mortality for the four focal species, and considering what other species are affected by repowered turbines. This is critical because some other species of concern could be affected by the larger, taller turbines.
- It's important to give the companies credit for moving forward with repowering.
- The key issue is what the reduction in mortality is for the four focal species under old turbines, new turbines, and a mixed environment. Change the monitoring program to maximize the answer to that question.
- An important question will be the impact of search radius on searcher efficiency.

Jesse Schwartz of the Monitoring Team clarified that each repowering project will be given a maximum number of avian fatalities that it cannot exceed. The question will be a yes/no answer of whether it has exceeded its number.

Public Comment

Ryan McGraw of AWI said that the settling parties will push back since they see repowering as a management action that achieved a 50% reduction in fatalities. In response, Sandra Rivera said that, while repowering was chosen as a management action, under CEQA, actions cannot be predetermined until the analysis is done. Therefore, the repowering project will stand on its own. 50% is to be measured as a percentage of the entire Altamont, as the permits say "Altamont-wide."

Shawn Smallwood said the topographic setting of fatalities will continue to inform repowering. In addition, the adjustment factors will continue to be used.

Renee Culver of NextEra said hypothesizing is going to be difficult with the mixed environment and issues like removal of transmission lines.

Jim Hopper of AES/SeaWest said the repowered environment is very unlikely to be intermixed. The landowners generally have one company on their property.

Shawn Smallwood said under the Settlement Agreement for repowering, there will be a budget cap of \$300,000 a year for monitoring. The Settlement Agreement includes methodologies for search radius and search interval.

Goals/Objectives for the Upcoming Bird Year



Whiteboard timeline for upcoming years

Sandra Rivera noted that 70% of Altamont turbines are projected to be removed by the end of 2014. Given that, what scientific questions should the Monitoring Team address going forward? The 50% decline goal will still be operative, but the number of turbines will be dropping. Adaptive Management Plan requirements will still be in effect, but NextEra will be under a different monitoring scheme. The EIR and the Avian Bat Protection Plan will determine whether the existing monitoring group and the SRC would have a role.

Doug Leslie, Monitoring Team Project Manager, asked the SRC if the goal is still to measure whether there has been a 50% decline with a certain level of confidence, for a certain period

of time, and to assess management action effects. There will likely be a two-week search interval for the repowered turbines – should there be efforts to make current monitoring comparable to that?

SRC Discussion

In discussion, SRC members made the following points:

- The goal is looking at the 50% and continuing to tease out the effectiveness of seasonal shutdown
- If there is a new monitoring process in place for repowering, it would take a lot of coordination to identify what the reduction is. In response, Sandra Rivera said it would be useful to see the effect of repowering. One question the settling parties will need to decide is, if the 50% is met, whether monitoring is still needed.
- When there is a change in protocol, it is helpful to run both the old and new protocols simultaneously so the relationship between their respective data can be understood, to apply the new system to the old generation turbines. We need data for the change in protocol. We have to, or we will lose all of our data.
- If the only aspect that is different is the search radius, then the only issue is searcher efficiency. If Shawn Smallwood is correct that the search radius isn't big enough, there could be a bias on the new turbines. It is a different issue than comparability. Jesse Schwartz of the Monitoring Team responded that the great majority of detections are within the search radius, and the question is how many fall outside of that radius. A straw man proposal is for the Monitoring Team to develop an analytical proposal in regard to search radius.
- If the search radius is okay now and there is an increase in the search radius which captures the same distribution of fatalities as the old radius, then it's the same method, and there would not appear to be a bias.
- In one SRC member's studies, topography overshadowed every other factor.
- An SRC member asked the Monitoring Team if it would be possible to extrapolate biweekly-interval data back to comparative monthly-interval data. The response was yes, but with a smaller search interval, there will be more bleedthrough.

Public Comment

Shawn Smallwood said he has about 10,000 records with the distance of carcasses from turbines. He believes many of the radii may be a bit short. It is okay, but we need to account for what we are missing, to quantify the effect. Searchers didn't go beyond what they thought was reasonable to see if there were more carcasses there.

SRC Recommendation on Goals and Objectives for the Monitoring Program

The SRC considered Monitoring Program goals and objectives going forward, in the context of the transition to a repowered APWRA environment, and recommended that the Monitoring Team:

1. Continue to measure success toward a 50% reduction of fatalities of the four focal species
2. Assess the feasibility/utility of deriving a correction factor to assure comparability between the current Monitoring Program analysis and monitoring of new repowered turbines
3. Investigate causes of burrowing owl fatalities

In regard to number 2, an SRC member asked that the Monitoring Team prepare a proposal indicating, if a correction factor is necessary, what it should be, or if it is not necessary, what the data is to support that conclusion.

Future SRC Meetings

For the coming year, the SRC will be busy through mid-2012. The final EIR for NextEra repowering is expected in mid-2012. Alameda County ended the HCP/NCCP process, because there was insufficient participation from the resource agencies.

In-Person Meetings

- **December 12-13, 2011. Topics:**
 - Avian Bat Protection Plan
 - Final monitoring report status
 - Burrowing owl distribution/abundance study results
 - Proposal for 2012 monitoring

- **February 2012, tentatively February 16-17. Topics:**
 - Final report QAQC data/fourth quarter 2011
 - Burrowing owl report
 - Draft repowering EIR

Documents Circulated at Meeting

P100_SRC Document List with Reference Numbers

[M73 2005-10 Monitoring Report](#)

[M82 Altamont Monitoring Report September 2011 Presentation Slides](#)

[P225 Alameda County - SRC Guidance on AWI 2011-2012 Seasonal Shutdown Waiver](#)

[P196 SRC Meeting Summary December 2010](#)

[P208 SRC Meeting Summary June 2011](#)

[P212 SRC Call Notes 7-5-11](#)

[P221 SRC Call Notes 8-11-11](#)

[P222 Yee More QAQC Simulation Analyses](#)

[M83 Small Raptor Probability of Removal Analyses](#)

[P223 Smallwood FloDesign Study Design](#)

[P227 Orloff Weather Presentation September 2011](#)

[P224 Summary of SRC Milestones June 2010-11](#)

SRC Meeting Participants

SRC Members Days 1 & 2

Joanna Burger

Jim Estep

Mike Morrison

Sue Orloff

Julie Yee

Staff

Sandra Rivera, Alameda County, Days 1-2

Andrew Young, Alameda County, Day 1

Mary Selkirk, Facilitator, Days 1-2

Ariel Ambruster, Associate Facilitator, Days 1-2

Monitoring Team

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

Chris Dreiman, enXco, Day 2

Jim Hopper, AES/SeaWest, Days 1-2

John Howe, FloDesign, Day 2

Josh Lazarus, enXco, Day 2

Ryan McGraw, AWI, Day 1

Tara Mueller, State Attorney General's Office, Day 1

Bob Power, Santa Clara Valley Audubon Society, Day 1

Shawn Smallwood, Days 1-2

Joan Stewart, NextEra, Days 1-2

Zack Walton, NextEra, Day 1

Mark Welther, Golden Gate Audubon, Day 1

List of SRC Agreements Developed September 26 & 27

(Compiled from this document)

SRC Recommendation on AWI Request for a 2011-12 Seasonal Shutdown Waiver

SRC members developed the following recommendation:

Guidance to Alameda County on the scientific issues relevant in considering the AWI request for a seasonal shutdown waiver for the 2011-12 winter season.

As Alameda County weighs the AWI request for a 2011-12 seasonal shutdown waiver, the County should consider the following scientific considerations:

1. Per the Monitoring Team September 2011 Final Report (M73), implementation of seasonal shutdowns has been successful in reducing red-tailed hawk winter fatalities by more than half (from 35% of annual fatalities in 2005 to 15% in 2009, based on Figure 3-10 regression trend).
2. Other species (American kestrel, burrowing owl, golden eagle) show no clear signal of either reduction or increase in fatalities during seasonal shutdown.
3. Issuing a waiver to AWI for the 2011-12 season could increase bird fatalities because of the intermixing of operating and non-operating turbines in close proximity, thus potentially erasing any gains from seasonal shutdown.
4. Allowing for a waiver for AWI would make analysis of seasonal shutdown avian fatality reduction and overall annual fatality reduction extremely difficult.
5. If Alameda County were to issue a waiver to AWI, the SRC concludes that the entire Monitoring Program design would need to be reconsidered in light of the fact that AWI turbines are interspersed throughout the Altamont Pass Wind Resource Area with other turbines subject to the seasonal shutdown requirement.
6. Since there is a measurable positive effect from seasonal shutdown on reducing red-tailed hawk fatalities, supporting the issuance of a waiver would violate the mission of the SRC.

AWI did not have the most recent analysis of red-tailed hawk fatality declines with seasonal shutdown when the company made its request. The SRC acknowledges that AWI's request for waiver on seasonal shutdown was submitted before the Monitoring Team's September 2011 Final Report was published.

SRC Recommendation on the QAQC Study

The SRC unanimously supported the following recommendation proposed by the Monitoring Team for continuation of the QAQC Study:

- The study should be continued through the first three months of the 2011-12 bird year, through the end of 2011. This would be half the cost of the existing QAQC Study
- The goal is to work up to a total of 50 records in the QAQC Study for small raptors
- The study will focus only on small raptors
- The interval will be two weeks

- Sampling will be blind
- Carcasses will be fresh, small raptors
- Carcasses will be left out for 90 days
- The study would include a total of three sites of 50 turbines each
- Searches would occur on Days 1, 15, 30, 60 and 90
- The study would abolish field manager post searches and replace with status checks

One SRC member qualified support for the vote with the addition that there be consideration of any follow-up when the SRC takes up the issue again in December and January.

SRC Recommendation on the FloDesign Study

The SRC approved the proposal as outlined in P223 Smallwood FloDesign Study Design, with a recommendation that the study include collection of behavioral data at the following points: the transition from operation to non-operation at the beginning of winter shutdown; at some point during the winter shutdown; and during the transition from non-operation to operation at the end of winter shutdown.

SRC Recommendation on Goals and Objectives for the Monitoring Program

The SRC considered Monitoring Program goals and objectives going forward, in the context of the transition to a repowered APWRA environment, and recommended that the Monitoring Team:

1. Continue to measure success toward a 50% reduction of fatalities of the four focal species
2. Assess the feasibility/utility of deriving a correction factor to assure comparability between the current Monitoring Program analysis and monitoring of new repowered turbines
3. Investigate causes of burrowing owl fatalities