

NOTES | 7/12/2012 Conference Call

Altamont Pass Wind Resource Area Scientific Review Committee

Prepared by the Center for Collaborative Policy

Reviewed and approved by the SRC

All 5 SRC Members Present

Discussion Topics

Analysis Subcommittee Update & Recommendations

FloDesign Studies

Upcoming AWI Permit Modification Request

Meeting Outcomes

- The SRC recommended using the Yee method and the Monitoring Team's newly developed detection dataset, which combines carcass removal and searcher efficiency to estimate detection probability for this year's final avian fatality report.
- The SRC concurred with Alameda County's determination to allow the FloDesign study to place carcasses for detection trials during this bird year only at non-monitored strings.

Analysis Subcommittee Update & Recommendations

Related Documents

Yee images attached to the end of this document:

1. Remaining Function
2. Searcher Efficiency Function

SRC Member Julie Yee gave an update on the Analysis Subcommittee's work. She has been getting data from ICF on its QA/QC study. ICF is cleaning and post-processing the data, so the dataset will be updated. The data includes:

- Placed or found carcasses left behind for the QA/QC study
- Carcass removal data from SRC Member Sue Orloff's 1992 study
- Carcass removal data from Monitoring Team scavenger trials and KB study

In her analysis/modeling, she has identified three categories of searcher efficiencies:

1. Fully blind situations, in which the searcher has not been informed of a carcass prior to search;
2. Situations, such as in fatality checks or post searches, in which the searcher is fully aware of the carcasses and purposefully checking their status; and
3. Partial blindness, or gray-area data, in which it is not clear how blind the searches were because the searchers were not on status checks but may have encountered the carcass in a previous search rotation.

She has attempted to calculate a detection probability for these cases.

She has split carcass populations into three size categories: small, medium and large. Sample sizes at this point are 85 small carcasses, 49 medium carcasses and 154 large carcasses.

She reviewed graphs showing an initial run of early data. Although the graphs don't contain final results, they indicate what results might look like.

Remaining Function:

- In each graph, the solid line represents Shawn Smallwood's fitting of small carcass removal rates as discussed in Smallwood 2007
- Ignore the solid line on graphs for medium and large birds
- The dashed line represents the model-based estimate, and the pair of dotted lines represent 95% confidence intervals.
- "Days since deposit" should be "age of carcass"
- The results for small birds were not as low as expected, but no conclusions can be reached until the program is checked and data are clean. The medium and large bird graphs reflect what would be expected, that larger birds would have a slower removal rate.

Searcher Efficiency Function:

- As expected, the more aware the searcher is of the bird, the higher the searcher efficiency. When searchers are aware, there is higher searcher efficiency with larger birds. The same pattern is not seen in blind searches.

Public Comment

Renee Culver of NextEra asked if the data include found carcasses tracked in the field or carcasses that were placed when moderately aged or in feather-spot condition. In response, Monitoring Team member Brian Karas said the data at this time appear to include only placements, but found carcass data will be added. Julie Yee acknowledged that the data used to derive these curves included feather spots, which could explain the higher-than-expected persistence rates (i.e. remaining function) for small birds.

SRC and Monitoring Team Comments and Questions on Searcher Efficiency

SRC members raised the following issues:

- It is unexpected that the estimated searcher efficiency curves are often below the solid line. In response, Julie Yee said the results can err up or down as a result of noise.
- It is odd that searcher efficiency didn't decline for small birds over time, but did for medium and large birds. That seems counterintuitive – what could that be a function of? SRC and Monitoring Team members suggested small bird carcasses in feather spot condition could spread out and become more visible over time than a piece of a remaining large bird.
- Can the formula capture the interaction between scavenger removal and searcher efficiency? In response, Julie Yee said age helps account for the carcass condition. By modeling the remaining rate with searcher efficiency by age, it accounts for some of the interaction.

Shawn Smallwood said his 2007 paper was based on averages from around the country of fresh, clean, colorful whole carcasses found once. They are not realistic, and we should expect that these results will be different.

SRC Members were asked to provide direction on three issues:

1. How to deal with feather spots
2. What number of size classes to use
3. How to address seasonality

1. How to Use Feather Spots in Analysis

SRC and Monitoring Team Questions and Comments

SRC and Monitoring Team members raised the following issues in discussion:

- The dataset may include apples and oranges because it includes feather piles and aged carcasses as well as fresh carcasses. In response, Julie Yee said this was a good point and the model needs to address the "already aged at time of deposit" effect.
- One approach would be to use the existing data on fresh, intact or partial carcasses that became feather spots at a natural rate and frequency. Doing this would make the issues disappear, as the problem comes with placed feather spots.
- It would make sense to separate feather spot data, but fresh feather spots do occur, so there needs to be thought about how to bring them into the model. The head of the search team used his expertise and experience to place feather spots in a realistic way.
- It may be helpful to separate out the placed feather spot data, as this is where there is potential that the Monitoring Team is monkey wrenching a bit and overcomplicating the model.
- Perhaps feather spot data should be eliminated.
- Whatever approach is taken, the confidence interval will still be wide. In some ways, this is rearranging the deck chairs.

Doug Leslie, Monitoring Team Manager, said the Monitoring Team had made a Herculean effort to track down fresh carcasses for the QA/QC study, and it's not clear to what extent those records are in the dataset at this date. The issue is that scavenger removal seems to occur in the first 24 hours, and after that, the change in the removal curve seems to be small. The debate about this issue has been ongoing for a long time.

Julie Yee suggested an approach of first separating out feather spots and looking at how the curves differ. They may not be very different. If not, the data could be combined. If they are very different, then consider how to use the feather spot data. She is uncertain how feather spot curves should be incorporated, if different. A default approach could be to use the Smallwood approach of handling feather spots: to exclude placed feather spots, but use data on carcasses that started out whole and turned in to feather spots.

SRC Direction on Approach to Feather Spots

The SRC supported Julie Yee's suggested approach.

2. Number of Size Classes in Analysis

Julie Yee said she plans to do model-fitting assessments and could look to see which of the two approaches, using three size classes or two size classes, produce a better quality fit.

SRC Direction on Number of Size Classes

After discussion, SRC members supported using two size classes, small and large, as this would support the priority focus on the four focal species.

3. How to Capture Seasonality

Julie Yee recommended fitting the data separately by seasons.

Doug Leslie of the Monitoring Team said he was concerned that, because there are issues about backdating and the 30-day search interval, if there are more samples in one season than another, it could result in biases.

An SRC member said it's important to try to capture seasonality, as it causes a lot of the error that is seen across the year. The Monitoring Team could quantify the error issue for the September meeting, explain the results and provide a recommendation on how to approach the issue going forward. Season could be defined for the analysis by how it impacts what searchers are trying to do.

Public Comment

Renee Culver of NextEra recommended using a bifurcated approach of seasonal analysis, dividing the months into two categories of rainy months and dry months.

Monitoring Team members noted that grazing intensity can shorten grass height and thereby mitigate the seasonal effect, and rainfall patterns differ year to year.

SRC Direction on Capturing Seasonality

After discussion, SRC members recommended dividing the data into a November-April wet season and an October-March dry season to analyze seasonality.

Detection Probability Approach to Use for Final Fatality Report

Julie Yee said she strongly believes this is the easiest way to establish removal rates, searcher efficiency, and aggregate detection, based on data collected under the QA/QC sampling design. The new approach is based on a much larger dataset from a much more current period. This is an improvement over using an older curve with less data. For any continuing unresolved issues, such as with feather spots, a default approach could be to use the same assumptions and approaches as the Smallwood approach.

Shawn Smallwood and Sue Orloff said in their studies, their carcasses started as whole.

Members of the Monitoring Team supported using the new dataset, which could be analyzed using the most conservative method.

SRC Recommendation on Detection Probability Approach to Use for Final Fatality Report

The SRC recommended using the Yee method and the Monitoring Team's newly developed detection dataset, which combines carcass removal and searcher efficiency, to estimate detection probability for this year's final avian fatality report.

Public Comment

Renee Culver of NextEra asked that sample sizes be made explicit in the report. The more buckets used, the more important it will be to see the sample sizes.

Next Steps

- The Monitoring Team and Julie Yee will work together to finalize QA/QC data in order to run the model to estimate detection probability for the final report

FloDesign Studies

Related Documents

[P246 Smallwood FloDesign Detection Trial Protocol](#)

Monitoring Program Update: Detection probability issue with existing study

Monitoring Team Manager Doug Leslie said one issue regarding the interaction between the Monitoring Program and the FloDesign study did not get daylighted at the May in-person meeting: the potential for teams to come across each other in the field and thereby bias searcher efficiency, if one team comes upon another team that has already discovered a fatality. He suggested that the FloDesign study could provide its schedule, and the Monitoring Team could work around it.

Shawn Smallwood, who is conducting the FloDesign study, said there is no set schedule, but he would know what plans are one day in advance.

Jesse Schwartz of the Monitoring Team recommended that search team manager Levin Nason contact Shawn Smallwood to inform him when the Monitoring Team will be at FloDesign turbines. The FloDesign study team will agree to make sure not to be in that area at those days/times.

The Monitoring Team and Shawn Smallwood agreed to take this approach.

Proposed FloDesign Detection Study

Sandra Rivera of Alameda County said Shawn Smallwood is planning to undertake detection trials at the FloDesign turbines. He had identified that there could be potential impact on the Monitoring Program if his team were to place carcasses in areas that the Monitoring Team searches. The Monitoring Team agreed, so the proposal is that, during this bird year, carcass placements would occur only on non-monitored strings. Alameda County would like to approve that approach and wanted to hear what the SRC recommends.

SRC Questions and Comments

SRC members raised the following issues in discussion:

- How close would the carcasses be placed to monitored turbines? In response, Shawn Smallwood said he is looking at the Venture site, which is not monitored. He thinks there is potential for contamination at other sites. There will be seven placed birds.

SRC Recommendation on FloDesign Detection Trail Carcass Placements

The SRC agreed that they didn't see a problem with the recommended approach of FloDesign carcass placements during this bird year occurring only at non-monitored strings.

Sandra Rivera said at its September meeting, the SRC will consider potential impacts of the FloDesign detection trial on the Monitoring Program, as the SRC's scope of review is as to how the study would affect the Monitoring Program, and not on the merits of the design itself. The Monitoring Program has done its own detection probability study and the FloDesign study is funded by the California Energy Commission and FloDesign. If SRC members would like to provide comments to Shawn Smallwood on his study design, they can do so on their own time.

Shawn Smallwood said he would like SRC comments on his design.

Monitoring Team Manager Doug Leslie and two SRC members said it would be helpful to have more study details, such as methods for collecting data and analytical approach.

Next Steps

- The SRC will consider whether the FloDesign detection trials would impact the Monitoring Program at its September meeting.

Upcoming AWI Permit Modification Request

Related Documents

[P247 AWI Request for Winter Shutdown Exemption for 3 Turbines](#)

Sandra Rivera of Alameda County said that AWI is asking for an exemption from 2012-13 winter shutdown for three turbines, for testing purposes. An SRC recommendation is needed at the September meeting. The request is separate from the company's larger application for permit modifications. Today's discussion is to identify what information the SRC will need in order to reach an informed decision in September.

Information Needed for September SRC Recommendation on AWI Request

SRC members identified the following information they would like for the September discussion:

- What hazardous risk category the turbines are
- Whether the turbines are monitored, and any related fatalities in the baseline or current periods
- The setting, including whether non-operating turbines nearby could serve as perch sites to draw birds in
- The length of the involved turbine rows; it might be better to keep a whole row running if it is a short row
- Spatial information, such as pictures, of the turbines, including a contextual picture of several rows in the area
- Whether the turbines are end-row turbines.

Sandra Rivera asked Andrew Ross if AWI has alternative turbines to propose, or only these three. He responded that AWI is happy to propose alternatives, if that is desirable.

Public Comment

Tara Mueller of the State Attorney General's Office said the AWI request would be subject to CEQA. The only way that CEQA would not apply is if there were an applicable exemption and no potential environmental impacts. If the turbines have not been monitored, the concern is that there is not information to determine if there would be a significant effect in continued operation.

Shawn Smallwood asked if fatality data from the last two years are ready for posting. Monitoring Team Manager Doug Leslie said the data are posted, but additional review is going to occur. The Monitoring Team will announce when the updated data are posted.

Next In-Person Meeting: September 13-14, 2012**Topics**

- Final bird fatality report
- Determination of 50% avian mortality reduction
- Assessment of hazardous turbines ranked 8.0 in preparation for December recommendation
- Discussion of transition to repowering and comparability
- Questions related to the AWI permit modification request and EIR

ATTENDEES**SRC**

Joanna Burger
 Jim Estep
 Michael Morrison
 Sue Orloff
 Julie Yee

Consultants

Doug Leslie
 Jesse Schwartz
 Brian Karas

Identified Public

Andrew Ross, AWI
 Jim Hopper, AES/SeaWest
 Joan Stewart, NextEra
 Renee Culver, NextEra
 Shawn Smallwood
 Tara Mueller, Attorney General's Office

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