Apr 27th, 11:00 AM - 12:00 PM

# Quantifying False Positives in Avian Survey Data

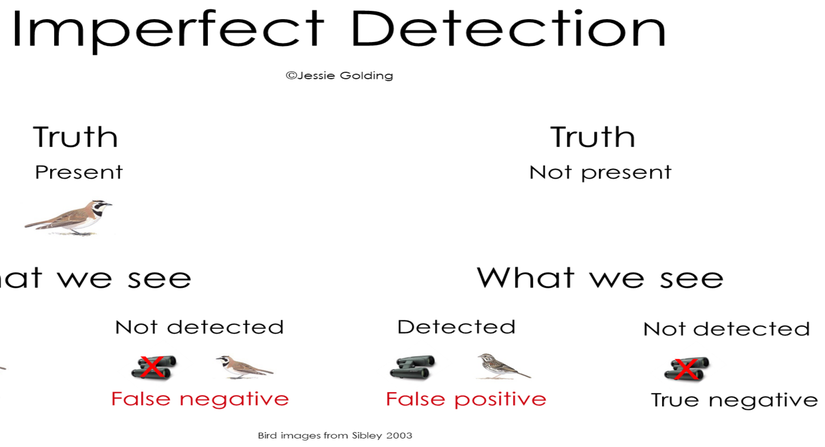
Kaitlyn M. Strickfaden
kaitlyn.strickfaden@umontana.edu

# QUANTIFYING FALSE POSITIVES IN AVIAN SURVEY DATA

*Kaitlyn Strickfaden, Avian Science Center at the University of Montana (Faculty Advisor: Dr. Victoria J. Dreitz)*

## Questions:

1. **Do paired observers report fewer false positives than unpaired observers?**
2. **Do experienced observers report fewer false positives than inexperienced observers?**




## Methods:

- Vocalizations of 10 Montana grassland songbird species obtained from Cornell library; background noise filtered out
- Surveys of filtered vocalizations randomly generated in R
- Observers identified vocalizations either alone or in pairs
- Observed data compared to computer-generated data (truth) in R
- False positive rates compared between:
  - Paired vs. unpaired observers
  - Experienced vs. inexperienced observers

References:
R Core Team (2013). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org/..
Miller, D.A., L.A. Bailey, E.H. Campbell Grant, B.T. McClintock, L.A. Weir, and T.R. Simons. 2015. Performance of species occurrence estimators when basic assumptions are not met: a test using field data where true occupancy status is known. Methods in Ecology and Evolution 6: 557–565.
Nichols, J. D., J. E. Hines, J. R. Sauer, F. W. Fallon, J. E. Fallon, and P. J. Heglund. 2000. A double-observer approach for estimating detection probability and abundance from point counts. The Auk 117: 393–408.

## Results:

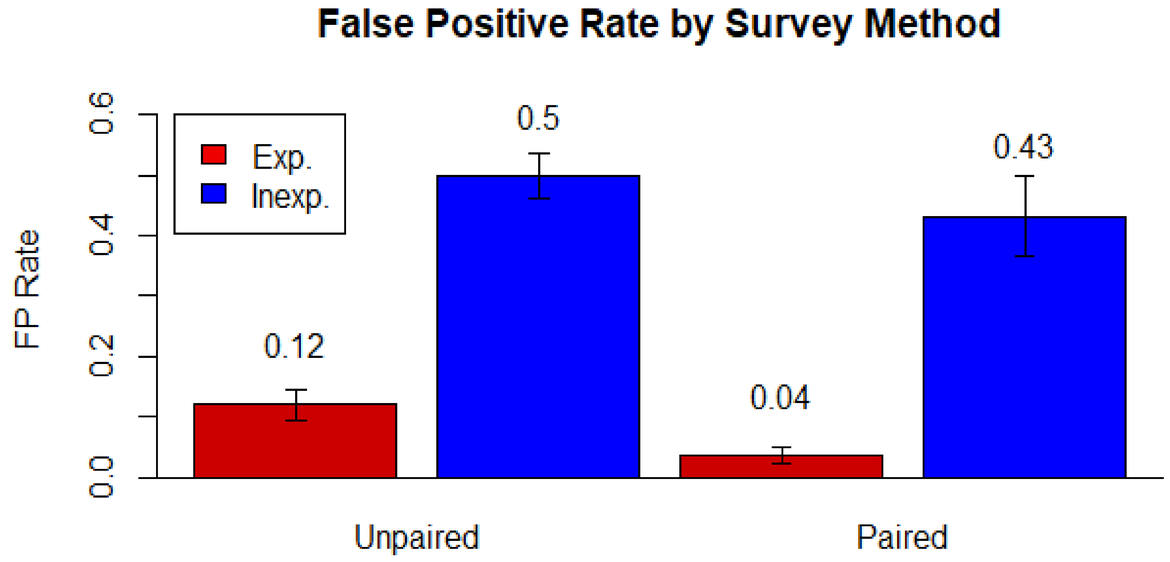



Figure 1: False positive rates in auditory avian survey data by observer experience level and survey method. Mean false positive rate is displayed above each bar. Error bars are 95% confidence intervals.

## Discussion:

- **Survey method <u>does</u> make a difference with experienced observers**
- **Survey method may not make a difference with inexperienced observers**
- **Experienced observers report far fewer false positives (but still report them)**

When making conservation recommendations, especially for threatened or endangered species, managers should recognize that false positives do occur in avian surveys, no matter the experience level of observers.

- ***How much do false positive rates change with visual detections?***
- ***How much do false positives bias population estimates?***

Acknowledgements: I would like to thank Dr. Victoria Dreitz for providing her expertise, resources, guidance, and especially her encouragement in helping me to complete this project. I would also like to thank Alan Harrington, Jessie Golding, Danielle Fagre, Jason Tack, and Kaitlyn Reintsma for their contributions. Last but certainly not least, I want to thank my many volunteers who collected this data and without whom I would have nothing to present.

AVIAN SCIENCE CENTER
UNIVERSITY OF MONTANA