

ST 506 Homework Set 3

Due Tuesday Sept 15, 2008

Please answer the following very brief questions about the discussion section of the water bird aerial survey paper by Conroy et al. (2008) that I placed on the class webpage. This paper is about the multiple observer method of estimating detection probability. Do not be concerned about the complexity of the analysis and do not spend too much time on this homework unless you have a special interest in this topic for your own research..

1. In paragraph two there is reference to an alternative approach of using ground and aerial counts which we discussed in class. What assumption about the ground counts are they concerned about? What are they suggesting about the relative merits of the ground count method vs the multiple observer method?
2. Consider the paragraph on P 741 that begins “ Under detection of birds..”. This paragraph relates to the points made in my lecture about the strengths and weaknesses of using indices. Briefly explain what the authors are saying related to this point. Would you say the authors are concerned about the value of indices vs. estimating absolute abundance in aerial surveys?
3. Briefly comment on how difficulties in counting the numbers of birds in a group may influence their results.
4. Revisit the lecture on use of the two independent observers to estimate detection probability in light of the last paragraph in the discussion. Why do they think they might underestimate detection probability rather than over estimate it? Go back to the equations that I gave you and the assumptions behind this model. There is one particular assumption we discussed that is relevant here.