Subject: Biometrics - Decision on Manuscript ID BIOM2016586P [email ref: DL-SW-4-a]
Date: Tuesday, January 10, 2017 at 1:47:49 PM Pacific Standard Time
From: Biometrics
To: Laura Cowen

January 10, 2017

Dear Dr. Cowen:

Thank you for submitting your paper #BIOM2016586P, "The effect of recycled individuals in the Jolly-Seber tag loss model," to Biometrics. Your paper has been reviewed by an associate editor and one referee, whose reports are enclosed. I am terribly sorry to report that the overall assessment was not positive and that the associate editor has recommended against publication. I am afraid that I must accept this recommendation, and we will not be able to publish your paper.

All of us agree that your paper is well-written and considers an interesting problem, but the consensus is that its contribution is, respectfully, too modest to make it competitive for publication in Biometrics. A primary concern is that there is no (data informed) motivation for the parameter values you have assumed, and the general feeling is that some of the chosen values are implausible. The Associate Editor further notes that 'the paper lacks meaningful instruction for what one should do if they find themselves in this situation (other than: "using tags with high retention rates").'; I share this concern.

As more specific points, I found 100 simulation runs rather limited, and would have valued comparisons with estimates that do take loss into account.

More detailed comments can be found in the attached reports. I hope you will find them useful for revising your manuscript before submitting it to another journal.

Please view this decision against the background of the strong pressure on the journal's pages, which forces us to reject many interesting and technically correct manuscripts.

Thank you for giving us the opportunity to consider your paper for publication in Biometrics. Although unfortunately we could not give you a positive decision on this occasion, I do hope you will consider sending further papers to us.

Yours sincerely,

Prof. Stijn Vansteelandt
Co-Editor of Biometrics

Associate Editor Comments to Author:

Associate Editor
Comments to the Author:
This paper considers the effect of recycled individuals on parameter estimation in a Jolly-Seber tag loss model. One of the motivations of the work is to offer guidance and understanding to designers of mark-recapture studies. This manuscript was considered by myself as well as a well placed referee. The referee thought that the paper was well written but wasn't convinced that the parameter values considered were realistic and correspond to practical situations.

I also have some related comments:

1. The scenarios that receive the most attention are those with \lambda = 0.2. I can't think of an application where this would be realistic. This implies that in between consecutive sampling periods over half of the animals you have

tagged (64%) are expected to lose both tags with only 4% expected to keep both tags. I doubt many biologists would spend the $$ on tagging in this situation and explore other technologies.

2. What are typical tag loss rates? If we assume that tags are lost independently, then we can estimate the tag loss rate, correct? Having real world data informing the simulations would help to motivate this study.

3. I am not sure this manuscript offers much in the way of guidance and understanding to designers of studies. The advice: "For researchers interested in conducting mark-recapture studies, we stress the importance of using tags with high retention rates, especially in situations where survival and capture rates are suspected to be high" seems less than practical. I suspect most biologists know that they want high retention rates. It would have been nice to see how the design could be improved motivated by a real world situation (and how alternative design/tagging approaches compare).

4. How does this work tie in with related work on misidentification? My understanding of that work is that the models are motivated because the recycled individuals were assumed to be potentially important.

Referee(s) Comments to Author:

Referee: 1

Referees comments to the Author. These may be passed without any edits.
The authors present a simulation study to assess the effect of “recycled individuals” in the Jolly-Seber Tag Loss (JSTL) model. These double-tagged individuals who lose both tags were previously assumed to be of a negligible number; however the simulation study shows that under certain parameter values, they can erode JSTL estimates, sometimes substantially. On the other hand, they show that the recycled individuals have a negligible effect across a wide range of parameter value combinations. The paper is well-written and technically sound, but is lacking any link of these parameter value combinations to real world practice. It is my understanding that double tagging is usually used in fisheries, which is not my area of expertise. I cannot tell from the paper if any of the scenarios where recycled individuals were problematic correspond to scenarios that occur in practice. Therefore, I do not know if the statement on line 213 is true (“This contradicts the previous assumption that the effect of recycled individuals is negligible in mark-recapture models”). I think this assumption was based on the range of parameter values encountered in practice and the authors making this assumption (including an author of this paper) would have known that it could be violated under some combinations of parameter values, but did not find them plausible to occur in practice.

Without a link to practice, it is hard for this paper to justify the journal space; however, if a link is made, I think it would be an important contribution to our understanding of the use of the JSTL model in practice.