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Dear Dr. Duplisea,

Thank you for considering another revision of manuscript PONE-D-19-26904R1, **“SimSurvey: an R package for comparing the design and analysis of fisheries surveys by simulating spatially-correlated fish stocks”** by Paul M. Regular, Gregory J. Robertson, Keith P. Lewis, Jonathan Babyn, Brian Healey and Fran Mowbray. We are also greatful for your detailed suggestions and we have made every effort to do justice to the changes you reccomend. Most importantly, we hope we have added sufficient content to the core of the paper elevate the manuscript from soley a software manual to a primary scientific publication. Though the how-to approach remains, we now see that describing some of the case study results in the core of the manuscript makes it more interesting and it adds another tangible reason for prospective users to learn how to use the package. Please see below for more details on the changes we made in response to your suggestions.

We submit this revised manuscript for your consideration and look forward to your decision.

Sincerely,

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Additional Editor Comments (if provided):

Dear Paul, you have made lots of excellent changes that I think help with the use of the package and responded to the many specific comments of reviewers which has no doubt corrected many technical issues and clarifications. The one thing I would say that you have not really done is get at the deeper research merits of this work beyond introducing a new piece of software. I think paper, as it stands, lacks a larger context and content which is important for the primary publication. My diagnosis for why this is is that the manuscript does not conform very well to more typical scientific reports (Intro, M&M, Result, Discussion) which can make it difficult for readers to find the larger scientific merits of the work. It is useful of course for those who already understand the merits of this kind of work but this work is for primary publication and it needs to appeal more to the former than the latter group. There is a very “how-to” feel to it (e.g. line 64 “In this section”) which I think detracts from getting at the larger purpose of the work.

I would really like you to address this issue of moving it from a software manual to a primary scientific publication. I do not think it should involve that much work but there will be some restructuring of sections as well as places to put in content and bring out conclusions. Here are my suggestions for this:

Try to follow a more traditional paper structure. This will help readers and it likely will also make it clearer for you on how you can inject content into the paper to move it beyond the software manual approach:

Introduction:

* You need to talk about wider issues and examples. e.g. examples of when poor survey design meant that scientific questions could not be properly addressed when good survey design meant they were. Examples of when good survey design allowed researchers to address needs that were unanticipated at the time it was designed. i.e. you need to build a better case (not just cost) of why survey design is really important and it is most powerful to do this with examples. You should try to bring in ideas related to ecosystem and climate changes and being able to track communities. Perhaps bring in species at risk ideas and tracking decline, you could bring in ideas related to MSC certification. These are just examples of specifics but you get the idea: the Introduction needs to have more general information outlining in both a broad and specific sense why we should be concerned about this.
* Keep in mind an educated reader who may not be in fisheries but is interested in why anyone should care about this or could, for example, be interested in surveying say caribou or songbirds or something outside of fisheries but where many of the motivation and concepts may be similar and they are doing a more general literature search before designing their own survey.

Methods:

* This will start at your “Model Structure” section. You should put a higher level heading just before that called Methods.
* I can see that it is hard to separate your Methods from Results. Your results are really in the section “Using SimSurvey” I would not be opposed to putting this as a separate Results section but I leave it to you to decide. Essentially what you have is a case study as an example of how it works and therefore specific results are less interesting than how you got there with the package. You might title it something like “Results: running a SimSurvey simulation”. This section also has a lot of content without a lot of explanation. for example, you have several large and complicated figures in a row. You should discuss not only what figures are meant to offer in the package but also what they mean. So for example on line 473 you refer to three figures (5,6,7) but you offer little interpretation of those figures just why you can make them which is another example of the limitations of the how-to manual approach. So you need to think of it as a case study and help someone decide the implications of their survey design.

Results:

* see comment above

Discussion:

* This starts just before “Research Opportunities”. You can keep these sections but there should be more preamble before jumping right into research opportunities. I suggest a general paragraph(s) that segue into your subsections of “research opportunities”, “future research”. In the Discussion you should address again some of the broader issues from the Introduction, e.g. how could spatial (depth) distribution changes anticipated under climate change for some population be tackled by survey design exploration now so that we can continue to track these changing populations 20 years down the road and do not lose the signal. How can this software help with that?
* I think something that can be useful for readers is to outline the steps in a thought process a researcher might undertake when setting up a survey (perhaps a separate subsection) and then how one might go about a SimSurvey run for this. It also gives you a good opportunity to discuss your multispecies ideas:
  + What is your current problem/needs
  + What are the constraints (HR and $ perspective)
  + What are the constraints from a biological, physical perspective
  + Resources available
  + What are your anticipated future needs (i.e. if climate change is going to make cod go deeper, will you be able to track it in 20 years?)
  + How could you consider some or all of these with SimSurvey
* Your “Assumptions” section should come down into the Discussion
* “Future Directions” should say something about randomfields re: Reviewer 1. Even if you just outline that you have considered it. You might also try to say something about optimisation of design which Reviewer 2 mentioned.