Dear EcoSphere Editorial Board

We are resubmitting our article (MS#ES14-00533) based on the invitation to re-submit with revisions. We are grateful for this opportunity to re-submit an improved manuscript.

We have made revisions in response to the concerns of the reviewers. Throughout the manuscript, we highlight areas in blue corresponding to new analysis or substantial revision. We provide details about our revisions below.

* Reviewer 1 felt that our presentation of the results in the Introduction, Results, and Discussion was redundant. Reviewer 2 also felt that describing our results in the Introduction was redundant. We have removed the details of the results from the Introduction accordingly.
* Reviewer 1 suggested we broaden our discussion by incorporating commentary on multi-species systems. We agree and expanded our discussion of multispecies systems by incorporating the reference the reviewer suggested, as well as a broader discussions of the merits of multispecies model and why both single- and multi-species are needed (lines 640-652).
* Reviewer 1 suggested we expand our discussion of invasion theory. We thank the reviewer for pointing us to this literature. We have incorporated a reference to the literature on invasion into a patchy environment and a discussion of a similarity between that model and ours (lines 610-621). We have also expanded our discussion of the similarities between an invading population at initially low abundance, as usually modeled in invasion theory, and the population tracking a shifting climate, as in our model (lines 530-536).
* Reviewer 1 referred us to existing literature on MPA spacing we had not mentioned in our paper. Reviewer 1 also suggested we add a sentence about how whether a fishery is optimally or over harvested affects the impacts of MPA spacing and more discussion of the distribution of harvesting pressure. We do not allow “fishing the line,” which would aggravate the problem by reducing the population where its density is lowest. Our results, therefore, are conservative. Kellner 2007.
* Reviewer 1 suggested we clarify the distinction between our analytical methods and simulation methods and the dispersal kernels we used for each.
* Reviewer 1 suggested we clarify our language about interactions between the two stressors throughout the paper. We recognize that our language with respect to interaction was confusing. To help clarify these points, we have made a distinction between an interaction between the critical rates of the two stressors and the interaction between their effects on population biomass (lines 234-238) and we have tried to be more explicit about which type of interaction we are referring to throughout the paper.
* Reviewer 2 suggested we include a case study to show how the model could be applied to an empirical system. We acknowledge that adding a case study would help to validate our results and show how they could be applied to empirical systems, but have not been able to do in the time allotted.
* Reviewer 2 suggested we discuss why we used as many iterations in our simulations as we did and the robustness of our results to this choice. We did not mean to suggest that we were modeling a population dealing with harvesting and climate change for 6000 years. The population reaches equilibrium after a short number of iterations, but we used a large number of iterations we used was primarily to ensure consist numerical results. We have now added some text to the Model section to clarify this issue (lines 314-317). Reviewer 2 also asked us to mention our parameter choices in the main text. To address this point, we added a sentence in the text stating that "our results are qualitatively robust and we choose a representative set of parameters for our figures" (lines 355-357).
* Reviewer 2 suggested we clarify our language about plants. We thank the reviewer for noticing the ambiguity in our language here and fixed the sentences to remedy the issue. Reviewer 2 also identified typos in our references. We thank the reviewer for noticing these mistakes and have remedied them.