

**College of Life Sciences and Agriculture**

**Department of Biological Sciences**

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Dear Editorial Board,

Please find enclosed the revision of the manuscript: “**Using mechanistic models to assess temporary closure strategies for small scale fisheries**”, by Sophie Wulfing, Ahilya Sudarshan Kadba, Merrill Baker-Médard, and Easton R. White for consideration in *Fisheries Research* as a Research Article. All sources of funding are acknowledged in the manuscript. There is no financial interest to report. I certify that the submission is our own original work and is not under review at any other publication, and this publication is available as a preprint on https://www.biorxiv.org/.

We believe this manuscript will be of general interest to the readers of *Fisheries Research* for both the scientific insights and the implications for fisheries management in Madagascar. We fit a Lefkovitch matrix population model to *Octopus cyanea* stocks in southwest Madagascar and found that populations are decreasing according to the model. We calculated estimates for Octopus Cyanea stocks’ per-life stage duration, survivability, and reproductive value along with the stable stage distribution. Finally, we simulated various management scenarios and found that temporary closures are an effective and flexible strategy for fishery conservation in fast growing species. These results highlight the importance of understanding life history patterns when instituting conservation initiatives as well as create estimates for the life history traits of *Octopus cyanea.*

We look forward to hearing from you at your earliest convenience.

Sincerely,



Sophie Wulfing

Masters Student

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