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September 6, 2018

Dr. Brian Fath,
Editor-in-Chief, *Ecological Modelling*

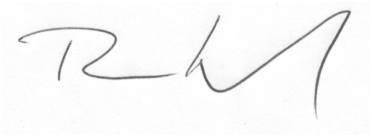
Dear Dr. Fath,

Enclosed please find a manuscript, entitled "Persistent problems in the construction of matrix population models," for consideration in the special issue on Matrix Population Models, edited by Dmitrii Logofet and Rob Salguero-Gomez. The findings in the paper have not been published elsewhere, and all co-authors agree to this submission.

In this paper, we describe, analyze, and discuss several errors that are commonly made when constructing animal matrix population models (MPMs) from ecological data. The various errors occur in between one and two thirds of sampled peer-reviewed studies, and their prevalence has not declined through time. In addition to describing the errors and demonstrating their high prevalence, we describe the impacts that such errors may have on the common endpoints of MPM analyses. We also speculate on the causes of these persistent errors, which include inconsistent notation, incomplete coverage in textbooks, and concepts that seem counter-intuitive to non-modellers. We also make suggestions for reducing the frequency of such errors in the future.

We think that our manuscript has important messages about the need to re-assess the quality of previously published MPMs and the challenges of helping biologists (many not explicitly trained in modelling) build more reliable models in the future.

Sincerely,



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