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Editors

*Basic and Applied Ecology*

Special issue: *Scales and heterogeneity in ecology*

February 14, 2022

Dear editors,

Hereby, we submit an original literature review entitled *“How has bird biodiversity changed over time? A review across metrics and spatio-temporal scales”* for consideration of the special issue about *Scales and heterogeneity in ecology* of *Basic and Applied Ecology.*

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere.

In this review, we highlight that considering spatio-temporal scaling of biodiversity trends is key to have a holistic overview of current biodiversity crisis. Especially, we show that for birds, trends of biodiversity can be opposed considering the scale at which they are assessed. Moreover, a lack of consensus about temporal scale features is highlighted and we give guidelines for authors to better consider them. Finally, we highlight an insufficient spatio-temporal coverage of biodiversity dataset, which can lead to biased assessment of temporal biodiversity trends.

Given the current debate about biodiversity loss, we believe that demonstrating the influence of spatial scales on biodiversity will give an empirical example that biodiversity trends have to be considered across scales. Even though several meta-analyses assess biodiversity trends for a given spatial scale, we noticed a lack of review listing them together with their spatial and temporal features (*i.e.* grain, extent, lag…). By considering spatio-temporal scales and heterogeneity of macroecological metrics, we believe that this literature review is relevant for the special issue “*Scaling and heterogeneity in ecology”*.

We have no conflict of interest to disclose.

Thank you for the consideration of our manuscript.

Sincerely,

François Leroy

PhD candidate