Madrid, December 14, 2023

Dear Dr. Geoffrey North,We would be grateful if you would consider the accompanying manuscript entitled “**Geographic patterns of living tetrapod diversity reveal the signature of global diversification dynamics**”, for publication as an Article in *Current Biology*.

In recent years, advances in quantitative comparative methods and an increasing availability of large-scale datasets have bolstered our knowledge of global patterns of vertebrate biodiversity. However, our understanding of the evolutionary processes generating the uneven geographic distribution of biodiversity in modern ecosystems is still incipient.

In this study, we evaluate the links between diversification dynamics, environmental factors, and geographic patterns of species richness in the four main groups of living terrestrial vertebrates (amphibians, squamates, birds, and mammals)—which encompass more than 36,000 living species and span the last 350 million years of vertebrate evolution.

Specifically, our approach integrates species richness and phylogenetic relatedness across geographic areas for more than 28,000 extant tetrapod species in one of the largest quantifications of phylogenetic diversity for vertebrates to date.The phylogenetic dimension of patterns in biodiversity also bears implications for conservation prioritisation and strategy, since preserving evolutionary history, and not only hotspots of species richness, has become a priority in the face of the challenges imposed by the ongoing loss of biodiversity at a global scale.

Our results reveal that there are common geographic regions with higher or lower phylogenetic diversity across all tetrapod groups, a widespread effect of recent speciation rates but a negligible effect of clade age, and environmental variables differently affecting endotherm and ectotherm lineages. Our study contributes a completely novel global perspective of the generative processes of tetrapod biodiversity which could potentially guide the application of conservation measures and stimulate future studies focused on specific clades.

We believe our results are relevant for all kinds of researchers interested in the origination and preservation of current biodiversity, as evidenced by the interest the submitted preprint from this article gathered in our field. Moreover, we are also confident that the methodological and conceptual perspectives of our study could be of great relevance for evolutionary biologists and macroecologists. Finally, the implications of this work might be of special interest to those focused on tdesigning conservation strategies.

[Shall we not add a bit here with the reviewers we reccommend?]

All authors have agreed to the content of the manuscript and its conclusions, and the paper is not under consideration elsewhere (please note that it has been recently posted in the preprint server *bioRxiv*: <https://doi.org/10.1101/2023.11.03.565445>).

Yours sincerely,

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