

EDITORIAL

Journal of
Biogeography

WILEY

Journal of biogeography innovation awards

We are delighted to publish the first collection of papers submitted in response to the announcement of the Journal of Biogeography (JBI) Innovation Awards. These manuscripts were considered using JBI's standard editorial and peer review processes, and were additionally ranked in terms of the originality of their ideas, identification of a gap in knowledge, impact of findings and quality of preparation of the manuscript at each round of editorial review. The set published here are the top ranked among the submissions, and also hold their own among the novel, insightful, consequential and well-prepared manuscripts submitted year-round to JBI. The papers address a range of topics within biogeography's broad remit, the focal taxa represent divergent lineages of eukaryotes and other organisms with which they interact, and the research or teams span continents. We congratulate William Carvalho, Thais Vasconcelos and Frederic Windsor as the inaugural recipients of the Journal of Biogeography Innovation Awards and their co-authors for sharing in this success.

The research article by Vasconcelos et al. (2021) on 'Linking mode of seed dispersal and climatic niche evolution in flowering plants' illustrates the influence of abiotic environments on plant-animal interactions over evolutionary time. They emphasize the role of adaptation of seed dispersal modes on plant movement and diversification in space. The authors test an interesting 'trapped' hypothesis of constrained niche evolution in fleshy-fruited plants because of the dependence on frugivores that are themselves niche-conserved. Their state-of-the-art comparative method models climatic niche evolution alongside fruit type, and shows a correlation between distribution in mesic habitats and presence of endozoochory in both temperate and tropical lineages. Although animal vectors might have an indirect modulatory role linked with other traits related to various habitats, certain modes of seed dispersal may contribute to biome shifts in plant niche preference, repeatedly in five diverse clades across the world. Vasconcelos et al. also point out that slow rates of climatic niche evolution might be tightly linked to stable climatic conditions, thus highlighting the importance of biodiversity conservation under rapid climate change.

The perspective by Windsor et al. (2022) 'Using ecological networks to answer questions in global biogeography and ecology' introduces the idea of ecological interactions as biogeographical units. This perspective piece departs from the notion that, contrary to species distributions, global patterns of ecological interactions are poorly known. The authors challenge the scale at which ecological networks are being examined, highlighting the increasing availability of global datasets on ecological interactions that provide unique opportunities to integrate and upscale knowledge on ecological

networks from local to global scales. They argue that analysing ecological networks at broader spatial scales can lead to a better understanding of the mechanisms driving ecological patterns and their evolutionary links. Windsor et al. illustrate the usefulness of ecological networks to contribute to global biogeography and our understanding of the natural world by providing a number of case studies using freely available datasets on species distribution modelling, restoration ecology and conservation.

The research article by Carvalho et al. (2022) 'Elevation drives taxonomic, functional and phylogenetic β -diversity of phyllostomid bats in the Amazon biome' explores how multiple dimensions of bat biodiversity vary spatially across one of the most biodiverse regions on Earth, as well as identifying the drivers of this variation. Using an impressive dataset covering over 100 sites in the Amazon region, the authors found that elevation was the primary driver of taxonomic and functional turnover, with the highest levels of dissimilarity occurring between lowland Amazonia and the Andes. These results highlight the importance of elevational gradients as strong environmental filters, with lowland Amazonia being notable for the levels of taxonomic, functional and phylogenetic redundancy exhibited by bat assemblages. Interestingly, phylogenetic turnover was less strongly associated with elevation, indicating that species replacement along the elevational gradient involves mostly closely related species, as well as highlighting that different facets of biodiversity can show contrasting patterns. As such, the results of Carvalho et al. provide additional support for the argument that biogeographical research will benefit from a more holistic approach to biodiversity.

Together, these manuscripts illustrate the creativity and vigour of biogeographical research being led by early career researchers from across the globe. They connect to the history and breadth of biogeography, including theoretical and empirical contributions that explore patterns and processes at scales ranging from regional to global. Each manuscript distinguishes itself as an unique contribution, yet they stand together in their outstanding quality and efforts to integrate multiple perspectives and gain a more holistic understanding of biodiversity dynamics. These manuscripts therefore connect multiple areas of biogeography and are likely to inform and steer some of its future directions. More broadly, this collection also speaks to ongoing challenges related to global change and biodiversity and is therefore relevant to additional areas of scientific inquiry. Ultimately, we believe these manuscripts herald a bright and vibrant future for biogeographical research and reaffirm the important contributions of the discipline to topics of broad societal relevance.

ACKNOWLEDGEMENTS

Thank you Crid Fraser, Rosie Gillespie, Holger Kreft, Richard Ladle, Christine Meynard, Jon Sadler, Amanda Taylor, Alex Zizka, and Damaris Zurrell for your parts in establishing the award, editing manuscripts and providing guidance. Thank you Emily Chappell, Emily Davies, Maggie Donnelly, Genevieve Horne, Helen Pedersen, and the entire JBI team at Wiley for partnership in setting up and managing the award.

CONFLICT OF INTEREST

The authors have no conflict of interests.

DATA AVAILABILITY STATEMENT


No data were involved in this publication.

AUTHOR CONTRIBUTIONS

All authors contributed equally to writing the manuscript.

Michael N Dawson¹ 

Ricardo A. Correia^{2,3,4} 

Qin Li^{5,6} 

Thomas J. Matthews^{7,8} 

Ana Filipa Palmeirim^{9,10} 

¹Life and Environmental Sciences, School of Natural Sciences, University of California, Merced, California, USA

²Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland

³Helsinki Institute of Sustainability Science, University of Helsinki, Helsinki, Finland

⁴DBIO & CESAM – Centre for Environmental and Marine Studies, University of Aveiro, Campus Universitário de Santiago, Aveiro, Portugal

⁵Grainger Bioinformatics Center, Field Museum, Chicago, Illinois, USA

⁶School of Ecological and Environmental Sciences, East China Normal University, Shanghai, China

⁷GEES (School of Geography, Earth and Environmental Sciences) and Birmingham Institute of Forest Research, University of

Birmingham, Birmingham, UK

⁸CE3C – Centre for Ecology, Evolution and Environmental Changes/Azorean Biodiversity Group / CHANGE, Global Change and Sustainability Institute and Universidade dos Açores – Faculty of Agricultural Sciences and Environment, Angra do Heroísmo, Portugal

⁹CIBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos, InBIO Laboratório Associado, Campus de Vairão, Universidade do Porto, Vairão, Portugal

¹⁰BIOPOLIS Program in Genomics, Biodiversity and Land Planning, CIBIO, Vairão, Portugal

Correspondence

Michael N Dawson, Life and Environmental Sciences, School of Natural Sciences, University of California, Merced, CA, USA.

Email: mdawson@ucmerced.edu

ORCID

Michael N Dawson  <https://orcid.org/0000-0001-7927-8395>

Ricardo A. Correia  <https://orcid.org/0000-0001-7359-9091>

Qin Li  <https://orcid.org/0000-0001-9976-8236>

Thomas J. Matthews  <https://orcid.org/0000-0002-7624-244X>

Ana Filipa Palmeirim  <https://orcid.org/0000-0003-3931-0578>

REFERENCES

- Carvalho, W. D., Fluck, I. E., Castro, I. J., Hilário, R. R., Martins, A. C. M., Toledo, J. J., Xavier, B. S., Dambros, C., & Bobrowiec, P. E. D. (2022). Elevation drives taxonomic, functional and phylogenetic β -diversity of phyllostomid bats in the Amazon biome. *Journal of Biogeography*, 50, 70–85. <https://doi.org/10.1111/jbi.14533>
- Vasconcelos, T., Boyko, J. D., & Beaulieu, J. M. (2021). Linking mode of seed dispersal and climatic niche evolution in flowering plants. *Journal of Biogeography*, 50, 43–56. <https://doi.org/10.1111/jbi.14292>
- Windsor, F. M., van den Hoogen, J., Crowther, T. W., & Evans, D. M. (2022). Using ecological networks to answer questions in global biogeography and ecology. *Journal of Biogeography*, 50, 57–69. <https://doi.org/10.1111/jbi.14447>