

Lorena M. Benitez

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Education

PhD in Atmospheric and Environmental Sciences	2022- Present
Satellite Data in Environmental Science Centre for Doctoral Training (SENSE CDT)	
School of Geosciences, University of Edinburgh, Edinburgh, UK	
Master of Environmental Science	2020
Yale School of the Environment, Yale University, New Haven, CT	
Bachelor of Arts in Integrative Biology	2017
Harvard University, Cambridge, MA	

Publications

Benitez, L. & SEOSAW Partnership. (In Prep). Floristic mapping for African trees using machine learning and remote sensing. *Remote Sensing in Conservation and Ecology*.

Benitez, L., Muchawona, A., Bowers, S., Chinofunga, A., Nyamugadza, E., Gotore, T., & Ryan, C.M. (In Revision). Zimbabwe's main woody vegetation types: an updated estimate of their structure, diversity, and extent. *Journal of Tropical Ecology*.

Wells, L., Rees, M., **Benitez, L.**, ... Ryan, C.M. (In Prep). The many to many relationships between structure and floristics in the woody vegetation of Africa. *Biotropica*.

Godlee, J. et al. (In Revision). Pervasive biomass accumulation in tropical savannas and dry forests. *Nature*.

Gotore, T., Muchawona, A., Ryan, C.M., **Benitez, L.**, Gumbo, S.C., Godlee, J.L., Mograbi, P., Murepa, R., Mutete, P., Nyamugadza, E., Tembani M.C., Archibald, S. (Accepted). Tree growth rates and their determinants inform sustainable harvesting of indigenous woodlands in Zimbabwe. *Biotropica*.

Carreiras, J.M.B., Higginbottom, T., Godlee, J.L., Harrison, S., **Benitez, L.**...Quegan, S. & Ryan, C.M. (2025). Determinants of L-band backscatter in dry tropical ecosystems: Implications for biomass mapping. *Remote Sensing of Environment*. [10.1016/j.rse.2025.115213](https://doi.org/10.1016/j.rse.2025.115213)

Pilon, N. et al. (2025). Open letter: There are more than just trees and forests to be conserved and restored. *Plants, People, Planet*. [10.1002/ppp3.10635](https://doi.org/10.1002/ppp3.10635)

Benitez, L., Parr, C.L., Sankaran, M., & Ryan, C.M. (2024). Fragmentation in patchy ecosystems: a call for a functional approach. *Trends in Ecology and Evolution*. [10.1016/j.tree.2024.09.004](https://doi.org/10.1016/j.tree.2024.09.004)

Davies, R., Ryan, C.M., Harrison, R.C., Dexter, K., Ahrends, A., **Benitez, L.**, ... Edwards, D. (2023). Precipitation gradients drive high turnover in the world's largest savanna woodland. *Ecography*. [10.1111/ecog.06720](https://doi.org/10.1111/ecog.06720)

Benitez, L., Kilian, J. W., Wittemyer, G., Hughey, L. F., Fleming, C. H., Leimgruber, P., ... & Stabach, J. A. (2022). Precipitation, vegetation productivity, and human impacts control home range size of elephants in dryland systems in northern Namibia. *Ecology and Evolution*. [10.1002/ece3.9288](https://doi.org/10.1002/ece3.9288)

Benitez, L., & Queenborough, S. A. (2021). Fruit trees drive small-scale movement of elephants in Kibale National Park, Uganda. *Biotropica*. [10.1111/btp.13010](https://doi.org/10.1111/btp.13010)

Benitez, L. (2020). Using protected area shape to model the impact of hunting and access on the survival of an economically valuable species. *Tropical Resources Bulletin*. [Available here](#)

Jones, K. E., **Benitez, L.**, Angielczyk, K. D., & Pierce, S. E. (2018). Adaptation and constraint in the evolution of the mammalian backbone. *BMC Evolutionary Biology*. [10.1186/s12862-018-1282-2](https://doi.org/10.1186/s12862-018-1282-2)

Job Experience

Joint Nature Conservation Committee , Peterborough, UK	
UKRI Policy Intern with Sustainable Consumption Team	2025
Project: Improving Biodiversity Metrics in the Global Environmental Impacts of Consumption Indicator	
Smithsonian Conservation Biology Institute , Front Royal, VA	
Graduate Fellow: Connectivity of Wildebeest in Athi-Kapiti Plains, Kenya	2024
Movement of Life Intern: Environmental factors influencing elephant home range size in Namibia	2020-2021
School of Geosciences, University of Edinburgh , Edinburgh, UK	
Project Officer: A Socio-Ecological Observatory for Southern African Woodlands (SEOSAW)	2021- 2023
Project Officer: Resolving the current and future carbon dynamics of the dry tropics (SECO) Project Officer	2021-2022

Academic Service

University of Edinburgh: Biosphere research seminar organiser, SENSE student representative, Geoscience postgraduate student committee representative, Building art renovation organiser ([media coverage](#))

International Union for the Conservation of Nature (IUCN) World Conservation Congress, Marseille, France

Head of Delegation for the Yale Tropical Resources Institute, 2021

Graduate Assistant to the IUCN World Commission on Protected Areas Beyond the Aichi Targets Task Force, 2021

International Society of Tropical Foresters Conference (ISTF), New Haven, USA

Content Director, 2020; Poster Coordinator, 2019

Ad Hoc Reviewer: Ecology and Evolution, Ecology & Society, International J. of Biodiversity & Conservation, Environment & Natural Resources Journal, Biodiversitas Journal of Biological Diversity, European Journal of Wildlife Research

Teaching & Outreach

Tutoring/Demonstrating

Associate Fellowship, AdvanceHE (HEA)

University of Edinburgh (2024-5): Conservation Science, Ecosystems & Global Change, Ecological and Environmental Sciences Field Course, SENSE Field Skills Training, Ecological and Environmental Analysis, Ecological Measurement

Yale University (2019-20): Principles of Ecology and Evolutionary Biology, Genetics and Development, Comparative Anatomy of Vertebrates

Instructor, Emission Factor from Deforestation Training Workshop, Harare, Zimbabwe.

2022

Logistics Coordinator, SEOSAW Herbaceous Protocol Training Workshop, Morogoro, Tanzania.

2022

Instructor, SEOSAW Data Cleaning and Analysis Workshop, Harare, Zimbabwe.

2022

Course Organiser, Global Conservation Policy and Planning, Yale University.

2020

Selected Presentations

Invited

2026 **Using Uniform Manifold Approximation and Projection to Reduce Ecological Complexity**, Machine Learning for Geospatial Observation, University of Edinburgh.

2026 **Biodiversity metrics in GEIC: Current Status and Future Improvements**, UK Four Countries Sustainable Consumption Workshop, Virtual.

2025-6 **Surveys of Trees in Practice: From savannas to forests**. Ecological & Environmental Analysis Undergraduate Course, University of Edinburgh.

2025-6 **Quantifying Forest Carbon: From measuring trees to biomass estimation**, Ecological & Environmental Analysis Undergraduate Course, University of Edinburgh.

2025 **Linking global consumption patterns to biodiversity loss: Policies and progress**, Conservation Science Undergraduate Course, University of Edinburgh.

2022 **Elephant-landscape interactions across scales: Case studies from Uganda and Namibia**, CREA Futures, Ecological and Forestry Applications Research Centre (CREAF), Autonomous University of Barcelona.

2022 **Elephants, Trails, and Fruit Trees: A Case Study from Kibale National Park, Uganda**, Behaviour, Physiology and Ecology Seminar Series (BEPSS), Bangor University, Virtual.

Contributed

2025 What is the current extent and status of Miombo woodlands?. *Talk*. **British Ecological Society**, Edinburgh, UK.

2025 Mobilizing Animal Movement Data to Make Better Maps of Functional Fragmentation in African Savannas. *Poster*. **European Space Agency Living Planet Symposium**, Vienna, Austria.

2025 Fragmentation in patchy ecosystems: call for functional not approach. *Poster*. **Biospace**, Frascati, Italy.

2024 A new floristic map for Zimbabwe reveals net growth across main vegetation types. *Talk*. **Regional Conference on Forests**. Harare, Zimbabwe and Virtual.

2023 Mapping the vegetation of Zimbabwe and assessing its composition, diversity, and carbon stocks. *Flash Talk*. **Savanna Science Network Meeting**, Kruger, South Africa.

2021 Environmental and anthropogenic factors predict elephant home range size across Namibia. *Talk*. **Ecological Society of America Conference**, Virtual.

2020 Reconciling the Role of Elephants in Restoration. *Flash Talk*. **International Society of Tropical Foresters**, New Haven, CT.

2019 Determining the Drivers and Efficiency of Elephant Trails in Kibale National Park, Uganda. *Poster*. **The Wildlife Society**, Reno, NV.