Calum Maney

Senior Modelling Scientist (Nature Futures), UNEP-WCMC

PhD candidate, Plant Production Systems, Wageningen University

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Publications and research

Journal articles

Maney, C., Sassen, M., Giller, K.E. (2024). Are agricultural commodity production systems at risk from local biodiversity loss? *Biol. Lett*. 20: 20240283 https://doi.org/10.1098/rsbl.2024.0283

Maney, C., Guaras, D., Harrison, J. *et al.* National commitments to Aichi Targets and their implications for monitoring the Kunming-Montreal Global Biodiversity Framework. *npj biodiversity* 3, 6 (2024). https://doi.org/10.1038/s44185-024-00039-5

Maney, C., Sassen, M. & Hill, S. L. L. (2022). Modelling biodiversity responses to land use in areas of cocoa cultivation. *Agriculture, Ecosystems & Environment.* http://dx.doi.org/10.1016/j.agee.2021.107712

Vynne, C. *et al.* (2022). An Ecoregion-Based Approach to Restoring the World's Intact Large Mammal Assemblages. *Ecography.* http://dx.doi.org/10.1111/ecog.06098

Woodley, S., Bhola, N., Maney, C. & Locke, H. (2019) Area-based conservation beyond 2020: A global survey of conservation scientists. *Parks* 25. https://doi.org/10.2305/IUCN.CH.2019.PARKS-25-2SW1.en

Hill, S. L. L. *et al.* (2019). Measuring Forest Biodiversity Status and Changes Globally. *Front. For. Glob. Chang.* https://doi.org/10.3389/ffgc.2019.00070

Reports and chapters

EU Directorate-General for Environment. BIOCLIMA: Assessing Land use, Climate and Biodiversity impacts of land-based climate mitigation and biodiversity policies in the EU (2024). https://environment.ec.europa.eu/publications/bioclima-assessing-land-use-climate-and-biodiversity-impacts-land-based-climate-mitigation-and_en

Cambridge Econometrics, UNEP-WCMC. Modelling an Inclusive Green Economy COVID-19 Recovery Programme for South Africa (2021). https://www.camecon.com/what/our-work/modelling-a-global-inclusive-green-economy-covid-19-recovery-programme/

Research presentations

BES Annual Meeting 2023 – The drivers of plant diversity in West and Central African cocoa plantations (oral presentation).

HORIZON CROPDIVA Symposium 2023 – Is "regeneration" possible? Plant diversity and benefits in West and Central African cocoa plantations (oral presentation).

Google 'Geo for Good' 2023 – Measuring impacts on ecosystem integrity for the Kunming-Montreal Global Biodiversity Framework (oral presentation).

ISCR 2022 – Understanding the links between cocoa management and productivity, biodiversity and ecosystem services in West Africa (poster).

World Biodiversity Forum 2022 – Modelling biodiversity intactness in areas of cocoa cultivation: implications for habitat management in West Africa (poster).

Employment history and work experience

UN Environment Programme World Conservation Monitoring Centre

Senior Modelling Scientist, Science Innovation Area (August 2024 - present)
Ongoing modelling work related to global biodiversity metrics, sustainable food systems, and collaborations on innovative geospatial modelling with the tech sector.

Modelling Scientist, Science Innovation Area (January 2024 – July 2024)
Research in the TRADE Hub focused on sustainable commodity production, along with duties in global biodiversity modelling and spatial analysis.

Project Researcher, Science Innovation Area (January 2022 – December 2023)
TRADE Hub: Leading investigation into feedbacks between land-use change, biodiversity, and ecosystem services, in the context of a key tropical commodity.

Programme Officer, Science Programme (January 2021 – December 2021)
Developing methods for estimating global ecosystem integrity and condition. Technical lead on a project using fuzzy cognitive mapping and the ENCORE knowledge framework to project futures for natural capital assets and ecosystem services under multiple COVID-19 recovery scenarios in South Africa.

Associate Programme Officer, Science Programme (October 2020 – December 2020)
UNEP Mangroves report: modelling and producing visualisations of global mangrove change, including biodiversity significance and intactness, over a 30-year period. High resolution biodiversity models: using novel, high-resolution remote-sensing products in R and Google Earth Engine to estimate landscape-scale impacts on biodiversity intactness.

Associate Programme Officer, Science Programme (November 2018 – July 2019)
UNEP Landscapes, Wildlife and People: supported a spatial analysis for identifying priority areas for mitigating human: wildlife conflict and a scoping analysis into the multidimensional biodiversity index.

Global Biodiversity Modelling Internship (August 2018 – October 2018)
Collating data for the PREDICTS (Projecting Responses of Ecological Diversity In Changing Terrestrial Systems) database of biodiversity responses to land-use change. Developing mixed-effects models to estimate generalised impacts of cocoa farming techniques on local biodiversity.

Education

Plant Production Systems, Wageningen University (2022 – 2025, submitted) *PhD*
Doctoral research focusing on multi-scale analyses of agricultural commodity system impacts and dependencies on biodiversity. Large-scale synthesis models of cocoa production system biodiversity intactness, a review of agricultural commodity impacts and dependencies on biodiversity, structural modelling of biodiversity in West and Central African cocoa, modelling biodiversity relationships with cocoa yield and ecosystem service delivery. Promoted by Prof. Ken E. Giller of Plant Production Systems, Wageningen University; supervised by Dr Marieke Sassen (PPS, WUR) and Dr Samantha L.L. Hill (UNEP-WCMC).

Darwin College, University of Cambridge (2019 – 2020) *MPhil by Research*
UNEP-WCMC studentship-funded research; thesis titled "Using national biodiversity planning and reporting data to investigate gaps in biodiversity conservation progress". Joint supervisors: Professor William Sutherland CBE, Conservation Science Group, University of Cambridge & Professor Neil Burgess, Chief Scientist, UNEP-WCMC. Please note the Zoology department does not class MPhil by Research degrees.

Queens' College, University of Cambridge (2015 – 2018) *BA Natural Sciences (First Class)*
Final year research project titled "Habitat change in tropical forest alters the distribution of morphologies in odonate communities". Joint supervisors: Dr Edgar Turner, Insect Ecology group, Zoology Department, Dr Sarah Luke, Zoology Department.

References available upon request