

Paola Merelli

Research Fellow

Scientific Background : Forest ecology, ecological modelling, macroecology, biodiversity monitoring, spatial ecology, connectivity, protected areas. Data management and analysis using R; data visualization and mapping using ggplot2; spatial analysis and modelling using R, QGIS and Google Earth Engine. Fieldwork experience in forest environment.

Work experience

Research Fellowship in spatial modelling for the Identification of Ecological Corridors

Alma Mater Studiorum - University of Bologna, Italy

04/2024 - 10/2025

Funded by the Italian Ministry of University and Research (MUR) under the PRIN 2022 programme, LS8: Environmental biology, ecology and evolution.

Part of the broader project: *"Identification of priority sites for the conservation of terrestrial animal and plant diversity to meet European and CBD 2030 targets."*

project ID 2022C8E2F4_001 - CUP J53D23006530006

Supervisor: Prof. Roberto Cazzolla Gatti

Education

PhD in Environmental and Applied Botany (SSD BIO 03) - Earth, Life and Environmental Sciences (STVA) programme

Alma Mater Studiorum - University of Bologna, Italy

11/2025 - Ongoing

Project title: *"Integrated Approaches for advanced Carbon and Biodiversity monitoring"*

funded by: European Union's Horizon Europe research and innovation programme, grant agreement No 101181878

Supervisor: Prof. Francesco Maria Sabatini

Co-Supervisor: Prof. Silvia Del Vecchio



Biodiversity enthusiast with a strong commitment to biological conservation, particularly within forest ecosystems. Beyond their inherent beauty, forests are our most effective allies in addressing climate change and biodiversity loss.

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🏠 Bologna

Date of Birth: 03/08/1999

Place of Birth: Alzano Lombardo, BG (Italy)

Citizenship: Italian

🚗 B Driving Licence

Skills

💻 R · Python · Julia
LaTeX · RMarkdown

⚙️ Google Earth Engine

🌐 QGIS

🔄 GitHub: Paola-Merelli

🗣️ Italian · mother tongue
English · C1 · Certified 2022
French · B2 · Certified 2018
Spanish · B2 · Certified 2017
Portuguese · B1

MSc in Science and Management of Nature (LM-60), International Curriculum: Global Change Ecology & Sustainable Development Goals

Alma Mater Studiorum - University of Bologna, Italy

10/2021 - 10/2023

- **Final grade:** 110/110 cum Laude
- **Curricular internship** (10/2022 - 02/2023)
Supervisor: prof. Duccio Rocchini
Topic: investigating the relationship between beta-diversity (comparing Jaccard, Sørensen & Rao's Q indexes) and land cover changes in space and time.
Activities: Literature review, remote sensing imagery processing, ecological and geospatial analysis, data visualization in R
- **Internship Abroad for final master thesis** (03/2023 - 06/2023)
Supervisor: prof. Roberto Cazzolla Gatti
Topic: Fieldwork at Iracambi Research Center (Minas Gerais, Brazil) for the thesis project on monitoring the effectiveness of different reforestation practices on biodiversity recovery.
Activities: Sampling protocols development, forest plot establishment, vegetation survey, camera trap placement, science outreach to local communities and schools.
- **Master thesis title:** *Monitoring the reforestation of the Brazilian Atlantic forest: from a biodiversity hotspot to a biodiversity hope-spot"*

BSc in Biological Sciences (L-13)

University of Milano-Bicocca, Italia

10/2018 - 07/2021

- **final grade:** 110/110 cum Laude
- **Bachelor thesis title:** *"miR-34 modulates wing polyphenism in the arthropod Nilaparvata lugens"*

Certifications

Machine Learning and ML Tools in Forestry workshop

by doc. Ing. Tomáš Kušta, Ph.D., Czech University of Life Sciences, Prague

26/03/2024

Basic principles of ML systems, selecting appropriate algorithms

Interests

 Hiking and exploring

 Wildlife Photography

tailored to specific research challenges, and exploring the potential of ML in forestry applications

Hands On – InterActive Computing for NBFC workshop CINECA

15/04/2025

Presentation of new InterActive Computing (IAC) service, in production on CINECA's Galileo100 supercomputer

Introduction to predictive models in Ecology workshop by prof. Luca Santini, Sapienza University of Rome

05/05/2025

Basic principles of modeling, model validation, predictive intervals, linear models for numeric, binary, and multinomial response variables, as well as tree-based machine learning methods.

Assessing species extinction risk with the IUCN Red List Categories and Criteria workshop

by prof Carlo Rondinini, Sapienza University of Rome

06/05/2025

Publications

- Paola Merelli, Lara Oliveira Clemente & Roberto Cazzolla Gatti. Monitoring the rewilding of the Brazilian Atlantic Forest on tree and mammal diversity: From a biodiversity hotspot to a biodiversity hopespot. *Environmental and Sustainability Indicators*, 2024.
<https://doi.org/10.1016/j.indic.2024.100496>
- Nania D., Andrea C., Mei M., Michez D., Di Musciano M., Cazzolla Gatti R., Merelli P., Pacifici M., Rondinini C. & Cerretti P. Spatial instability affects key biodiversity areas scoping for bumblebees across three decades (**submitted** to *Biological Conservation*)
- Paola Merelli, Michele Di Musciano, Pierfilippo Cerretti, Andrea Cristiano, Dario Nania, Marco Musiani, Michela Pacifici, Carlo Rondinini, Alessandro Chiarucci, Roberto Cazzolla Gatti. Connect Biodiversity: Planning Protected Areas to Maximize Connectivity. (**in preparation**; target journal: *Methods in Ecology & Evolution*)

- Andrea Cristiano, Roberto Cazzolla Gatti, Alessandro Chiarucci, Michele Di Musciano, Paola Merelli, Dario Nania, Michela Pacifici, Carlo Rondinini, Pierfilippo Cerretti. Data quality and resolution affects identification of potential Key Biodiversity Areas – a case study for mammals in Italy (**in preparation**; target Journal: *Perspectives in Ecology and Conservation*)

Conferences

- **Poster** *Monitoring the Rewilding of the Brazilian Atlantic Forest on Tree and Mammal Diversity: From a Biodiversity Hotspot to a Biodiversity “hope spot”*
ECCB 2024 – 7th European Congress of Conservation Biology, July 17th – 21st, Bologna, Italy."
- **Oral Communication** *Connect Biodiversity: Planning Protected Areas to Maximize Connectivity*
SCB 2025 - 2nd Italian Conference of Conservation Biology for Early Career Researcher, May 6th - 9th, L'Aquila, Italy.

Seminars

Speaker, Biome Lab Seminar 05/27/2025.

“Connect Biodiversity: planning protected areas to maximize connectivity” - Department of Biological, Geological & Environmental Sciences, Alma Mater Studiorum - University of Bologna

Speaker, Biome Lab Seminar 11/21/2025.

“Monitoring the reforestation of the Brazilian Atlantic Forest: from biodiversity hotspot to biodiversity hopespot” - Department of Biological, Geological & Environmental Sciences, Alma Mater Studiorum - University of Bologna

Educational Activities

Teaching Tutor for *Biology of Human and Environmental Health*
– *Ecosystem Health* course (code B6600)

Alma Mater Studiorum - University of Bologna, Italy

10/2024 - 03/2025

Co-supervisor, MSc thesis *"Echoes of the forest: Assessing Re-forestation in the Mata Atlântica through Soundscape Analysis"*, Department of Biology, University of Pisa, February 2025.

Supervised student: Ester Bergamini. Collaborated with Prof. Dimitri Giunchi and Prof. Roberto Cazzolla Gatti.

Topics: acoustic indices, ecological monitoring, forest conservation, habitat restoration.

Co-supervisor, MSc thesis *"The importance of Key Biodiversity Areas in mapping ecological connectivity"*, Department of Biological, Geological & Environmental Sciences, University of Bologna, December 2024.

Supervised student: Irene Cassinelli. Collaborated with prof. Roberto Cazzolla Gatti.

Topics: Protected Areas, Key Biodiversity Areas, Important Birds Areas, Ecological Corridors, Connectivity.

Field assistant at Iracambi Research Center (Minas Gerais, Brazil), April-May 2024, supporting field activities for MSc thesis projects of two students (University of Pisa and University of Bologna).

Scientific Collaborations

April 2024 – ongoing: University of L'Aquila, collaboration within the PRIN 2022 project *"Identification of priority sites for the conservation of terrestrial animal and plant diversity to meet European and CBD 2030 targets."*

April 2024 – ongoing: University of La Sapienza (Rome), collaboration within the PRIN 2022 project *"Identification of priority sites for the conservation of terrestrial animal and plant diversity to meet European and CBD 2030 targets."*

May 2024 – ongoing: LIPU (Lega Italiana Protezione Uccelli), collaboration within the PRIN 2022 project *"Identification of priority sites for the conservation of terrestrial animal and plant diversity to meet European and CBD 2030 targets."*

April – May 2024: Iracambi Research Center (Minas Gerais, Brazil), collaboration on field activities and internship assistance for MSc thesis projects focused on forest biodiversity monitoring

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Bologna, 20 June 2025