

Rocio Beatriz Cortes Lobos

PhD Candidate

Date of Birth: 09/10/1996

Place of Birth: Santiago de Chile, (Chile)

Citizenship: Italian, Chilean

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Education

PhD Programme in Earth, Life and Environmental Sciences
Alma Mater Studiorum - University of Bologna, Italy
11/2023 - ongoing

PhD title: Deep Learning for modelling current and future biodiversity scenarios

Founded by the Horizon Europe program 'Biodiversity Building Blocks for Policy - B3' Grant Agreement n. 101059591

Supervisor: Prof. Duccio Rocchini (UNIBO)

Co-Supervisor: Dott. Michele Di Musciano (UNIVAQ)

- **Project B3** aims to standardize biodiversity data within the Global Biodiversity Information Facility (GBIF), improving their accessibility and usability for scientific research and policy-making.
- As part of the modelling work package, my research focuses on developing strategies to assess the quality of biodiversity data, with particular attention to spatial and temporal limitations (e.g. sampling bias and data degradation).
- I work with large-scale occurrence and environmental datasets to evaluate how these limitations affect the robustness and transferability of Species Distribution Models (SDMs).
- I am currently based at the University of Aveiro (Portugal), where I am testing and applying these approaches in a deep-sea context.

M.Sc. in Science and Management of Nature (LM-60)
Alma Mater Studiorum - University of Bologna, Italy
09/2021 - 10/2023

Skills

🔗 R · Python
LaTeX ·
Markdown ·
JavaScript ·
⚙️ Google Earth Engine
🌐 QGIS, SNAP
🔄 GitHub: rociobeatrizc
🗣️ Spanish · Native speaker
Italian · Native speaker
English · B2

- Solid knowledge of ecology, nature management, conservation, and environmental protection.
- Experience with statistical and computational methods for the analysis of environmental data.
- In-depth training during the curricular internship in **machine learning** techniques applied to satellite data for the production of land-cover maps.
- Master's thesis: *An Early Warning System based on Machine Learning Detects Deforestation during the Ukraine War.*
Supervisor: Prof. Roberto Cazzolla Gatti

Final grade: 110/110 *cum laude*

B.Sc. in Astronomy (L-30)

Alma Mater Studiorum – University of Bologna, Italy
09/2016 – 03/2020

- Strong foundation in physics, mathematics, and statistics.
- Bachelor's thesis: *Main Thermonuclear Reactions in Stars.*

Final grade: 103/110

Certifications

Earth Observation Remote Sensing Workshop 2024
ESA Academy, Transinne, Belgium
15–19/07/2024

- Advanced training in multispectral, thermal, SAR, and In-SAR satellite data analysis.
- Practical use of Google Earth Engine and ESA SNAP toolbox.

Technician in Meteorology, Climatology, and Environmental Resource Management
FSE, Fondazione Aldini Valeriani, Bologna
11/2022 – 10/2023

- Assessment of environmental impacts and development of monitoring and territorial protection plans.

Interests

- Outdoor sports: climbing and alpinism
- Member of the Italian Alpine Club (CAI).
- Member of WWOOF Italia, a network promoting cultural exchange between people and local organic farms.

- Planning of mitigation measures for environmental and climate-related risks.
- Training in Meteorology and Climatology: global and regional models, climate variability, and meteorological data processing.
- Internship in Urban Microclimatology at the National Research Council (CNR), Bologna.

DataLab Project
European Social Fund, Emilia-Romagna Region
 03/2020 – 07/2023

- Data Analysis and Visualization tools: experience with Tableau, Python, and Power BI.
- Artificial Intelligence and Machine Learning: model development and analysis using Python.

Publication(s)

- Gatti, R. C. (1), **Lobos, R. B. C. (1)**, Torresani, M., & Rocchini, D. (2025). *An early warning system based on machine learning detects huge forest loss in Ukraine during the war*. *Global Ecology and Conservation*, 58, e03427 (1 authors equally contributed and share co-first authorship)
- **Rocio Beatriz Cortes Lobos**, Ricci, L., Martini, M., Testolin, R., Di Musciano, M., Moudry, V., Groom, Q., Rocchini, D. *When accessibility distorts niche quantification: a virtual species framework comparing ideal and road-biased sampling* (Under Review on *Ecological Informatics*, June 2025)
- Santovito, Diletta; Chiarucci, Alessandro; Rocchini, Ducio; Santi, Francesco; **Cortès Lobos, Rocio Beatriz**; Testolin, Riccardo, *Bridging biodiversity gaps: Assessing R tools for harmonising vascular plant records*. *Ecological Informatics*, 2026, 93, Article number: 103543, pp. 1 - 10

Congress attendance

- **Congress:** World Biodiversity Forum (June 2024) - Davos, Switzerland

Abstract (Poster): What a Clichè: the impact of spatial bias on modelling species distribution.

- **Congress:** BioSpace25 (February 2025) - ESA Rome, Italy

Abstract (Demo Session): Biodiversity data cubes.

- **Congress:** Biodiversity and Global Changes: a Conservation Perspective 2nd Conference of Conservation Biology for Early Career Researchers (May 2025) - L'Aquila, Italy

Abstract (Poster): Close to the roads, far from the niche: assessing the representativeness of species sampling in geographic and environmental space

- **Congress:** Living Planet Symposium (ESA) (June 2025) - Wien, Austria

Abstract (Demo Session): Biodiversity Data Cubes for Earth Science: From SQL Queries to Standardized Geospatial Output

- **Congress:** British Ecological Society (December 2025) - Edinburgh, UK

Abstract (Poster): Do living data also die? Quantifying temporal degradation via null time-series congruence