

## Ludwig Baldaszti, MSc

Global Change Institute, School of GeoSciences, University of Edinburgh

RBGE – Royal Botanic Garden Edinburgh

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### Research Interest

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My driving motivation is to expand our understanding of biodiversity patterns in order to accelerate global conservation efforts. In my current work I am identifying gaps in the availability and accessibility of global plant biodiversity data to inform policy-makers. I have a particular interest in developing transdisciplinary biodiversity monitoring approaches to improve the conservation of rare species.

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### EDUCATION

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- 2022 - *cont.*     **PhD in Atmospheric and Environmental Sciences**, University of Edinburgh and Royal Botanic Garden Edinburgh  
*Project: Assessing extinction risk and rarity in plants*  
*Supervisors: Dr Tiina Särkinen, Dr Caroline Lehmann, Dr Peter Moonlight*
- 2020 - 2021     **MSc in Biodiversity and Taxonomy of Plants**, University of Edinburgh and Royal Botanic Garden Edinburgh  
*Thesis: Exploring the ecology and geography of range size rarity: Where are the rare things found?*  
*Graduated with Distinction, average grade: 81.1%*
- 2017 - 2020     **BSc in Biology**, University of Vienna  
*Thesis: A comparison of dry grassland communities and their ecological indicator values in Austria (in German)*  
*Focus: Ecology with a special interest in biodiversity dynamics*
- 2019 – 2020     **Erasmus+ Exchange Programme**, University of Uppsala

### EMPLOYMENT

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- 2022             **Field Assistant**, EURAC Research Bolzano, Italy  
*Project: Biodiversity Monitoring South Tyrol - [Webpage](#)*
- 2021 - 2022     **Fee-based researcher**, Royal Botanic Garden Edinburgh, United Kingdom  
*Project: Formal IUCN Red List threat assessments of tropical Andean *Solanum* species*
- 2018 - 2019     **Research Assistant**, Terrestrial Ecosystem Research, University of Vienna, Austria  
*Project: SEACUE - Seasonal Dynamics of Soil Microbial Carbon Sequestration*

### PUBLICATIONS

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- Ludwig Baldaszti**, *Where the rare plants are: Exploring range size rarity in *Solanum* and *Begonia**. 2021. Thesis available at Research-Scotland - <https://hdl.handle.net/20.500.12594/19884>
- Jörg Schneckner, **Ludwig Baldaszti**, Philipp Gündler, Michaela Pleitner, Andreas Richter, Taru Sanden, Eva Simon, Felix Spiegel, Heide Spiegel, Carolina Urbina Malo and Sophie Zechmeister-Boltenstern. *Seasonal dynamics of soil microbial respiration, growth, biomass, and carbon use efficiency. (in revision at Soil Biology & Biochemistry (SBB19475R1))* Preprint at SSRN - <http://dx.doi.org/10.2139/ssrn.4033336>
- Ludwig Baldaszti**, Edeline Gagnon, Peter Moonlight, and Tiina Särkinen. *Where the rare plants are: Testing the range size-niche breadth hypothesis in a tropical context. (in prep. for Diversity and Distributions - manuscript available on request)*

**Ludwig Baldaszi**, *Solanum spp\**. The IUCN Red List of Threatened Species. (submitted to IUCN)

## SCHOLARSHIPS AND AWARDS

2022	NERC E4 DTP PhD Stipend (NE/S007407/1)	66,562.86£
2021	Edinburgh Botanic Garden Sibbald Trust (SC016908)	4,860.00£
2020	Mobility Scholarship funded by the State of Austria	1,628.00€
2020	University of Vienna Performance scholarship	803.35€
2020	E-fellows.net scholarship	non-monetary
2019	Erasmus+ grant	2,469.00€

## COMMUNICATION AND SCIENTIFIC OUTREACH

2022	Processing of biodiversity survey results for local farmers, <b>Data compilation and editing</b>
2021 – cont.	klimareporter.in: Initiative to promote climate change awareness in Austria (funded by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology), <b>Editorial Board and author</b> - <a href="#">Webpage</a>
2020	Global University Climate Forum 2020: Design of King's buildings permaculture garden, <b>Project conceptualisation and outreach</b> - <a href="#">Webpage</a>

## CONFERENCES AND WORKSHOPS

2022	University of Edinburgh Global Change Symposium 2022, <b>Speaker (15-min talk)</b>
2022	BES Annual Meeting, Storytelling with Data, <b>Participant</b>
2021	Young modellers in ecology, YoMoS, <b>Speaker (5-min talk)</b>
2021	Young systematist Forum, YSF, <b>Speaker (5-min talk)</b>
2021	Botany 2021, Using Digitized Herbarium Data in Research, <b>Participant</b>

## ACADEMIC SERVICE

2022	BES Annual Meeting, <b>Chair (Novel Methods in Biodiversity Monitoring)</b>
2022	Symposium on the inner-Alpine dry meadows of the Terra Raetica, <b>Conference Helper</b>
2022	E4 DTP Student Advisory Board, <b>Board Member</b>

## TEACHING

2023	Conservation and Sustainability, Postgraduate, University of Edinburgh, <b>Course assistant</b>
2023	Field ecology, Year 2 Undergraduate, University of Edinburgh, <b>Demonstrator</b>
2016 - 2018	1. Football Club Paulaner Wieden, 16-18 years, <b>Football trainer</b>

## LANGUAGES

<b>German</b>	Native speaker (C2)	<b>French</b>	Intermediate (B1)
<b>English</b>	Fluent (C2)	<b>Spanish</b>	Basic (A1)

## BOTANICAL AND ECOLOGICAL EXPERTISE

I have experience in conducting taxonomic projects such as the creation of a draft taxonomic account of the genus *Dracocephalum* for the Flora of Nepal. I have extensive knowledge of multiple floristic regions and have undergone scientific training in species identification and working with scientific collections. As an ecologist by training, I possess expert knowledge of the interactions of organisms and communities with their environment and processes at an ecosystem scale (energy and material flows through systems).

- ✓ *Expertise in global plant taxonomy, nomenclature, and the work with scientific collections with a special focus on the flora of the Neotropics and Central Europe*
- ✓ *RBGE Certificate in Field Botany*

- ✓ *Practical experience with habitat classification following the European Habitats Directive*
- ✓ *Expert knowledge of bird and mammal diversity across Europe*
- ✓ *Applied experience with trait measurements relating to ecosystem functioning*

## **CONSERVATION AND BIODIVERSITY MONITORING**

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I have detailed knowledge of the impact of anthropogenic activities on biodiversity, the climatic system and people. I have worked with applied conservation methods such as the use of grazing to maintain functional diversity in grasslands. I have experience with methods to determine areas for conservation prioritisation, such as the Natura 2000 framework and Important Plant Areas (IPA).

- ✓ *Thorough understanding of the mechanisms and impact of the climatic and biodiversity crisis on nature and society*
- ✓ *Insights into the multifaceted behavioural and political contexts which determine the likelihood of success of conservation measures*
- ✓ *Expertise in methods for dry grassland conservation in Europe*
- ✓ *Expert knowledge of spatial conservation prioritisation*

## **LABORATORY AND FIELDWORK EXPERIENCE**

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I have carried out fieldwork across several Central European countries, using an array of ecological methods to quantify biodiversity and environmental parameters. I have experience with molecular methods to analyse microbial communities and soil chemistry, such as DNA extractions from soil samples.

- ✓ *Fieldwork experience in Italy, Austria and Sweden, including vegetation monitoring, freshwater sampling, and soil sampling*
- ✓ *Extensive work experience in a biogeochemical laboratory*
- ✓ *Experience in using the Standardised EDGG methodology for sampling grassland diversity and habitat mapping within the European Habitat Classification Framework*
- ✓ *Expertise in vegetation surveys across habitat types including grasslands, bogs, and alpine areas*

## **DATA SCIENCE**

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I have used the programming language R for the mapping and statistical analysis of biodiversity patterns and have used methods such as species distribution modelling to determine future threats to endangered plant species home to the Peruvian and Bolivian Andes. I have experience in using GIS software to map and analyse biodiversity data. I have conducted phylogenetic analyses in groups such as Southeast-Asian *Begonia* and *Cyrtandra* species.

- ✓ *Advanced R knowledge for the statistical analysis of large ecological datasets (> 1,000,000 records)*
- ✓ *Experience with univariate and multivariate statistics, e.g., t-test, ANOVA, correlation, regression, GLM, PCA, cluster analysis*
- ✓ *Extensive experience in the use of ArcGIS, QGIS, and DIVA-GIS*
- ✓ *Phylogenetic analysis using Parsimony, Bayesian, and Maximum Likelihood methods in PAUP, MrBayes, and BEAST*

## **ADDITIONAL SKILLS**

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- Full clean EU driving license
- Paramedic certification as part of the Austrian alternative civilian service for 9 months undertaking more than 200 hours of first aid training

## **PROFESSIONAL SOCIETIES**

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Scottish Alliance for Geoscience, Environment & Society, British Ecological Society, Botanical Society of Britain and Ireland, Botanic Gardens Conservation International