

MAURÍCIO H. VANCINE

Ecologist and Doctoral Student in Ecology, Evolution and Biodiversity
São Paulo State University (UNESP), Rio Claro, SP, Brazil
mauricio.vancine@gmail.com, +55-19-993-340-549, mauriciovancine.github.io

CAREER SUMMARY

I am an Ecologist (2014), Master in Zoology (2018) and PhD student at the Department of Biodiversity, all from Universidade Estadual Paulista, Rio Claro/SP, Brazil. I performed more than 660 hours of complementary education in national and international institutions focused on statistical modeling in ecological.

My expertise encompasses spatial ecology, landscape ecology, ecological modeling, species distribution modeling (SDM), ecological and spatial data analysis, the impacts of habitat loss and fragmentation on biodiversity, amphibian ecology, as well as proficiency in the R programming language.

Starting from 2017, I have authored over 20 articles published in distinguished Ecology journals. These publications primarily showcase the outcomes of my research on the effects of landscape structure and climate change on biodiversity in South America, with a focus on the Atlantic Forest Hotspot.

At present, I am actively engaged in the development of tools to calculate landscape metrics using the R language and GRASS GIS. Furthermore, I have devoted over 500 hours to teaching and promoting the utilization of the R language through workshops, undergraduate and graduate courses, and the publication of the book titled 'Ecological Analyses in R'.

RESEARCH INTERESTS

Habitat loss and fragmentation, landscape metrics, species distribution modeling (SDM), community ecology, amphibian ecology, conservation, teaching statistics and R language

EDUCATION

São Paulo State University (UNESP) *Mar 2020 - Mar 2024 (expected)*
Ph.D., Graduate Program in Ecology, Evolution and Biodiversity GPA: 4.00
Thesis: Landscape structure as a predictor of taxonomic and functional diversity of amphibians in the Atlantic Forest
Advisor: Prof. Dr. Milton Cezar Ribeiro

São Paulo State University (UNESP) *Mar 2016 - Jul 2018*
M.S., Graduate Program in Biological Science (Zoology) GPA: 4.00
Thesis: Diversity, distribution and effect of climate change on Atlantic Forest amphibian communities [link](#)
Advisor: Prof. Dr. Célio Fernando Baptista Haddad

São Paulo State University (UNESP) *Mar 2011 - Mar 2015*
B.S. in Ecology GPA: 3.43
Thesis: Effect of fragmentation on the persistence of anuran amphibians (Amphibia: Anura) within the Atlantic Forest [link](#)
Advisor: Prof. Dr. Milton Cezar Ribeiro

COMPLEMENTARY EDUCATION

- **Joint Species Distribution Modelling with HMSC (45 h)** *2022*
University of Jyväskylä (Online), Jyväskylä, Finlândia, [link](#)

- **Data Science Journey (330 h)** 2022
 Ômega Data Science (Online), Curitiba, Paraná, [link](#)
- **Hierarchical Modelling of Species Communities with the R-package Hmsc (25 h)** 2020
 University of Helsinki (Online), Helsinki, Finland, [link](#)
- **School on Community Ecology: from patterns to principles (60 h)** 2020
 São Paulo State University (UNESP), São Paulo, SP, Brazil, [link](#)
- **Introduction to Hierarchical Modeling (45 h)** 2019
 Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil, [link](#)
- **Geoprocessing with GRASS GIS (24 h)** 2016
 São Paulo State University (UNESP), Rio Claro, SP, Brazil
- **V Southern-Summer School on Mathematical Biology (53 h)** 2016
 São Paulo State University (UNESP), São Paulo, SP, Brazil, [link](#)
- **Biology and conservation of amphibians and reptiles (44 h)** 2015
 Instituto Boitatá, IBEC, Alfenas, MG, Brazil, [link](#)
- **Ecological data analysis with R (40 h)** 2011
 São Paulo State University (UNESP), Rio Claro, SP, Brazil

PUBLICATIONS

Peer-reviewed (most relevant)

1. Beca G, **Vancine MH**, Carvalho CS, Pedrosa F, Alves RSC, Buscariol D, Peres CA, Ribeiro MC, Galetti M. 2017. **High mammal species turnover in forest patches immersed in biofuel plantations.** *Biological Conservation* 210:352–359. [10.1016/j.biocon.2017.02.033](#)
2. **Vancine MH**, Duarte KS, Souza YS, Giovanelli JGR, Sobrinho PMM, López A, Bovo RP, Maffei F, Lion MB, Ribeiro-Júnior JW, Brassaloti R, Ortiz C, Sawakuchi HO, Forti LR, Cacchiali P, Bertoluci J, Haddad CFB, Ribeiro MC. 2018. **ATLANTIC AMPHIBIANS: a data set of amphibian communities from the Atlantic Forests of South America.** *Ecology* 99(7):1692–1692. [10.1002/ecy.2392](#)
3. Marjakangas E, Abrego N, Grøtan V, Lima RAF, Bello C, Bovendorp RS, Culot L, Hasui E, Muylaert RL, Lima F, Niebuhr B, Oliveira AA, Pereira L, Prado I, Stevens RD, **Vancine MH**, Ribeiro MC, Galetti M, Ovaskainen O. 2020. **Fragmented tropical forests lose mutualistic plant-animal interactions.** *Diversity and Distributions* 26(2):154–168. [10.1111/ddi.13010](#)

Peer-reviewed (August 27, 2023)

1. Beca G, **Vancine MH**, Carvalho CS, Pedrosa F, Alves RSC, Buscariol D, Peres CA, Ribeiro MC, Galetti M. 2017. **High mammal species turnover in forest patches immersed in biofuel plantations.** *Biological Conservation* 210:352–359. [10.1016/j.biocon.2017.02.033](#)
2. de Castro Pena JC, Goulart F, Fernandes GW, Hoffmann D, Leite FS, dos Santos NB, Soares-Filho B, Sobral-Souza T, **Vancine MH**, Rodrigues M. 2017. **Impacts of mining activities on the potential geographic distribution of eastern Brazil mountaintop endemic species.** *Perspectives in ecology and conservation* 15(3):172–178. [10.1016/j.pecon.2017.07.005](#)
3. Muylaert RL, Kingston T, Luo J, **Vancine MH**, Galli N, Carlson CJ, John RS, Rulli MC, Hayman DT. 2022. **Present and future distribution of bat hosts of sarbecoviruses: implications for conservation and public health.** *Proceedings of the Royal Society B* 289(1975):20220397. [10.1098/rspb.2022.0397](#)

4. Monteiro ECS, Pizo MA, **Vancine MH**, Ribeiro MC. 2022. **Forest cover and connectivity have pervasive effects on the maintenance of evolutionary distinct interactions in seed dispersal networks**. *Oikos* 2022(2):oik.08240. [10.1111/oik.08240](https://doi.org/10.1111/oik.08240)

Books

1. Da Silva FR, Gonçalves-Souza T, Paterno GB, Provete DB, **Vancine MH**. 2022. **Análises Ecológicas no R**. Nupeea: Recife, PE, Canal 6: São Paulo. 640 p. ISBN 978-85-7917-564-0. [link](#)

For all publications, citations, and journal referee

[ORCID](#), [Web of Science](#), [Scopus](#), [Google Scholar](#)

MANUSCRIPTS IN REVIEW

1. Teixeira JVS, Bonfim FCG, **Vancine MH**, Ribeiro MC, Oliveira LC. Effect of landscape attributes at multiple scales on the occurrence of the threatened golden-headed lion tamarin, *Leontopithecus chrysomelas* Kuhl, 1820 (Primates, Callitrichidae). *American Journal of Primatology*.
2. Tonetti V, Bocalini F, Schunck F, **Vancine MH**, Butti M, Ribeiro MC, Pizo M, Balmford A. The Protected Areas network may be inefficient to cover biodiversity in a fragmented tropical hotspot under different climate scenarios. *Perspective in Ecology and Conservation*.
3. Anunciação PA, Ernst R, Martello F, **Vancine MH**, Ribeiro MC, Carvalho LMT. Climate-driven loss of taxonomic and functional richness in Atlantic Forest anurans. *Perspective in Ecology and Conservation*.

FUNDING

- **Doctoral Graduate Scholarship**, São Paulo Research Foundation (FAPESP) 2022-2024
Grant: 2022/01899-6
Value: BRL 91,002.24
- **Master Graduate Scholarship**, São Paulo Research Foundation (FAPESP) 2017-2018
Grant: 2017/09676-8
Value: BRL 16,248.54
- **Undergraduate Research Scholarship**, São Paulo Research Foundation (FAPESP) 2013-2015
Grant: 2013/02883-7
Value: BRL 10,539.87

AWARDS AND HONORS

- High Academic Performance Award, São Paulo State University (UNESP) 2015

RESEARCH EXPERIENCE

- **Doctoral research** 2020-currently
Title: Landscape structure as a predictor of taxonomic and functional diversity of amphibians in the Atlantic Forest
Aim: analyzing the structure of landscapes throughout the Atlantic Forest; analyze how landscape structure affects the taxonomic and functional diversity of amphibian communities; and analyze this same question of species-specific mode, in addition to analyzing co-occurrences using JSDMs.
- **Master research** 2016-2018
Title: Effect of Landscape Modifications and Climate Changes on the Persistence of Amphibians in the Atlantic Forest
Aim: to present an assessment of the surveys of the amphibian communities for the Atlantic Forest; to investigate how habitat loss and fragmentation affect the persistence of amphibians; and to investigate how climate change affect the future persistence of the genus *Brachycephalus*.

- **Undergraduate research** *2013-2015*
 Title: Effect of fragmentation on the persistence of anuran amphibians (Amphibia: Anura) within the Atlantic Forest
 Aim: evaluate the relative contribution of landscape indices (percentage of forest cover, connectivity, relief and urban proximity) to the persistence of species using species distribution modeling.

TEACHING EXPERIENCE

Graduation courses (300 h)

- **Introduction to the use of geospatial data in R (60 h)** *2021*
 Invited teacher, Ecology, Biodiversity and Evolution Graduate Program, São Paulo State University (UNESP)
- **Introduction to the use of geospatial data in R (60 h)** *2020*
 Invited teacher, Ecology, Biodiversity and Evolution Graduate Program, São Paulo State University (UNESP)
- **Introduction to Geoprocessing for Ethnobiology and Conservation (45 h)** *2019*
 Invited teacher, Ethnobiology and Nature Conservation Graduate Program, Rural Federal University of Pernambuco (UFRPE)
- **Ecological Niche Modeling: theory and practice (60 h)** *2017*
 Teaching assistant, Ecology and Biodiversity Graduate Program, São Paulo State University (UNESP)
- **Ecological Niche Modeling: theory and practice (45h)** *2016*
 Teaching assistant, Ecology Graduate Program, The University of Campinas (UNICAMP)
- **Ecological Niche Modeling in R (30 h)** *2016*
 Teaching assistant, Ecology and Biodiversity Graduate Program, Graduate Program, São Paulo State University (UNESP)

Undergraduate courses (102 h)

- **Statistical Models in Ecology (30 h)** *2020*
 Teacher, Ecology Undergraduate, São Paulo State University (UNESP)
- **Statistical Models in Ecology (12 h)** *2018*
 Teaching assistant, Ecology Undergraduate, São Paulo State University (UNESP)
- **Quantitative Ecology (60 h)** *2015*
 Teaching assistant, Ecology Undergraduate, São Paulo State University (UNESP)

Workshops and Short courses (104 h)

- **Introduction to the R language for data manipulation and visualization (09 h)** *2022*
 Short course instructor, XXXIII Ecology Studies Week, São Paulo State University (UNESP)
- **Introduction to the R language for data manipulation and visualization (08 h)** *2021*
 Short course instructor, XXXI Ecology Studies Week, São Paulo State University (UNESP)
- **Geoprocessing with QGIS (03 h)** *2021*
 Short course instructor, 32^a Biology Studies Week, São Paulo State University (UNESP)
- **Introduction to species distribution modeling using the R language (06 h)** *2021*
 Workshop instructor, Mastozólogos Organizados em uma Conferência Online (MOCÓ), Sociedade Brasileira de Mastozoologia

- **Introduction to R Language (08 h)** 2019
Short course instructor , XXX Ecology Studies Week, São Paulo State University (UNESP)
- **Introduction to R Language (08 h)** 2019
Short course instructor, 30^a Biology Studies Week, São Paulo State University (UNESP)
- **Introduction to Species Distribution Modeling using R Language: theory and practice (07 h)** 2018
Short course instructor, 9^o Brazilian Congress of Herpetology, The University of Campinas (UNICAMP)
- **Field work with amphibians (08 h)** 2018
Short course instructor, 29^a Biology Studies Week, São Paulo State University (UNESP)
- **Field herpetology (15 h)** 2016
Short course instructor, XXVII Ecology Studies Week, São Paulo State University (UNESP)
- **Introduction to software R (16 h)** 2016
Short course instructor, XXVII Ecology Studies Week, São Paulo State University (UNESP)
- **Introduction to software R (08 h)** 2015
Short course instructor, XXVI Ecology Studies Week, São Paulo State University (UNESP)
- **Organization of data in electronic sheets - Calc (08 h)** 2014
Short course instructor, XXV Ecology Studies Week, São Paulo State University (UNESP)

ADMINISTRATIVE EXPERIENCE

- **Student representative** 2020-2021
Graduate Program in Ecology, Evolution and Biodiversity, São Paulo State University (UNESP)

PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

- Associação Brasileira de Ecólogos (ABE)
- Associação Brasileira de Ciência Ecológica e Conservação (ABECO)

STUDENT SUPERVISION

- **Lucas de Souza Almeida** 2022
Conhecimento atual, distribuição potencial e conservação de Cecílias (Amphibia: Gymnophiona)
Coadvisor, Master thesis, Ecology, Biodiversity and Evolution Graduate Program, São Paulo State University (UNESP)
- **Bruno Eduardo Ribeiro Silva** 2022
Comparação da distribuição de espécies inferidos por Modelos de Nicho Ecológicos e mapa de especialistas da IUCN para anfíbios anuros da América do Sul
Undergraduate thesis, Ecology, São Paulo State University (UNESP)
- **Helena Thereza Carvalho de Oliveira** 2021
Distribuição do padrão reprodutivo em comunidades de anuros na Mata Atlântica
Undergraduate thesis, Biological Science, São Paulo State University (UNESP)

SERVICES

Journal referee: *Zoologia, PLOS One, Biological Invasions, Hydrobiologia, Scientific Data, Diversity and Distributions, Papéis Avulsos de Zoologia*

SKILLS

Programming languages

- R (advanced), tidyverse (advanced), markdown (advanced), quarto (intermediate), shiny (basic), LaTeX (basic), git (basic), Python (basic), JavaScript (basic), shell/bash (basic)

R packages

- *LSMetrics*: multiscale calculation and spatialization of landscape metrics using GRASS GIS
Authors: Bernardo Niebuhr, **Maurício Humberto Vancine**, Renata de Lara Muylaert, John Wesley Ribeiro, Milton Cezar Ribeiro
Site: mauriciovancine.github.io/lsmetrics
- *ecodados*: ecological data base for teaching statistics
Authors: Gustavo Paterno, Diogo B. Provete, Fernando Rodrigues da Silva, Thiago Gonçalves-Souza, **Maurício Humberto Vancine**
Site: paternogbc.github.io/ecodados
- *amphiBR*: dataset from the official publication of the List of Amphibians in Brazil published by the Brazilian Society of Herpetology
Authors: Paulo Barros de Abreu Junior, **Maurício Humberto Vancine**, Diogo B. Provete
Site: paulobarros.github.io/amphiBR

Statistical knowledge

- *Descriptive statistics*: tabular data manipulation (advanced), spatial data manipulation (advanced), tabular data visualization (advanced), spatial data visualization (advanced)
- *Inferential statistics*: frequentist (advanced), likelihood (intermediate), bayesian (basic)

Softwares

- QGIS (advanced), GRASS GIS (advanced), GNU/Linux (intermediate)

Languages

- English (intermediate)
- Spanish (basic)
- Portuguese (native speaker)

MEDIA

News

YouTube

Podcasts and interviews

REFERENCES

- **Prof. Dr. Milton Cezar Ribeiro**, São Paulo State University (UNESP), Brazil
milton.c.ribeiro@unesp.br, +55-19-3526-9680
- **Prof. Dr. Célio F. B. Haddad**, São Paulo State University (UNESP), Brazil
haddad1000@gmail.com, +55-19-3526-4302
- **Dr. Thiago Gonçalves-Souza**, University of Michigan, USA
tgoncalv@umich.edu, +1-734-596-0508
- **Dr. Renata Lara Muylaert**, Massey University, New Zealand
R.deLaraMuylaert@massey.ac.nz, +64-06-356-9099 ext. 85217