TAINÁ ROCHA

I am a Brazilian researcher working on patterns of biodiversity distribution, focusing on the impacts of global change (climate change and land-use and land-cover change). My recent interests and work include: **1.** Analysis of climate data and land-use and land-cover data under different scenarios of climate change, **2.** Spatial analysis of species diversity (alpha and beta diversity), **3.** Ecological niche models/ species distribution models and other niche analyses to assess the impacts of global change on biodiversity, **4.** Biogeographic patterns and evolutionary history in the Neotropics.
Note: I use open-source tools and platforms. I am interested in good practices about open science (open databases, open software, etc.), good workflows, reproducibility and FAIR principles.
CV available in Portuguese version here

Online version available at https://tai-rocha.github.io/Tai-Rocha_CV.github.io/

EDUCATION

2017 | 2013
PhD in Zoology
Emílio Goeldi Museum — MPEG, Brazil
- DISSERTATION: Phylogeographic of disjunct bird between Amazon and Atlantic Forest

2012 | 2010
MSc in Environmental biology
Federal University of Pará — IECOS, Brazil
- THESIS: Phylogeographic analysis of *Xiphorhynchus guttatus* from Amazon and Atlantic Forest

2010 | 2006
Degree in biological science
Federal University of Pará — UFPA, Brazil

COMPLEMENTARY TRAINING COURSES

2021
Flexdashboard: Interactive panels using R
Analyze. Share. Reproduce. Your data tells a story. Use rmarkdown and Flexdashboard and transform your analysis into high-quality documents, reports, presentations and dashboards.
Online

2021
Managing tables with dplyr R package
The main functions of dplyr for handling tables.
Online

2021
Regular expressions (regex) for data cleaning
Regex as part of the data cleaning and transformation process using Tidyverse R packages.
Online

CONTACT

Github
Lattes
Linkedin
ORCID
Researchgate
taina013@gmail.com
Twitter
Website

2020

Open Life Science program

OLS-2. Training for early stage researchers and young leaders interested in furthering their Open Science skills.

Online

2020

Writing academic manuscripts using rmarkdown

This training provided the different steps and tools for writing academic manuscripts or technical reports in an automated and reproducible way using R and rmarkdown.

Online

RESEARCH EXPERIENCE

Present | 2021

National Center for Conservation of Flora [1])

IUCN Green Status

Online

- The Green Status assessment can be thought of as having two main parts: (I) defining the “fully recovered” state, and (II) assessing species’ condition relative to the “fully recovered” state in order to evaluate conservation impact. Conservation impact is evaluated based on estimation of species condition under various scenarios (past, current, and future, with or without conservation.

Present | 2021

United Nations Volunteers

UN Online Volunteers

United Nations

- Research Support for an Automated Analysis of Sustainable Development Goals
  https://www.osdg.ai/

Present | 2021

Independent research

Home Office

Home Office

- Forest under different scenarios of climate change
  https://github.com/Tai-Rocha/Forest_Scenarios.github.io

SKILLS

R

Git

GitHub

Markdown

LaTeX

Linux OS

Virtual Machines

GIS

ArcGIS

2021 | 2019

Postdoctoral Researcher

Terrestrial Ecosystem Modeling — JBRJ, Brazil
Supervisor: Marinez F Siqueira

- Beta diversity in Caatinga dry tropical forest
  https://github.com/Tai-Rocha/Caatinga_Dry_Forest.github.io
- Climatic niche analysis of *Syzygiella rubricaulis* (Bryophytes)
  https://github.com/Tai-Rocha/S_rubricaulis_bryophytes
- The first botanical explorations of bryophyte diversity in the Brazilian Amazon mountains: high species diversity, low endemism, and low similarity
  https://github.com/Tai-Rocha/Bryophyte-Amazon-mountains
- Ecological niche models with future projections of Dimorphandra wilsonii Rizzini (Fabaceae) presented to Green List in the three-year activity plan of the Brazilian Plant Red List Authority member of the Plant Conservation Commitee between 2017-2020 and the Species Survival Commission of the International Union for Conservation of Nature (IUCN)
  https://github.com/Tai-Rocha/faveiro
- Ferns and lycophytes diversity of Tijuca forest.
  https://github.com/Tai-Rocha/Ferns-and-lycophytes

2019 | 2017

Researcher of Technological Development and Innovation

INCT Ecology, Evolution and Biodiversity Conservation — UFRJ, Brazil
Supervisor: Mariana M Vale

- Global land-use and land-cover (LULC) data under historical, current, and future climatic conditions
  https://github.com/Tai-Rocha/LUH2_Data
- Ecological niche models (ENMs) for *Carpornis melanocephala* (Passeriformes: Cotingidae) in Rio de Janeiro State,Brazil
  https://github.com/Tai-Rocha/Carpornis_melanocephala
- Ecological niche models and niche similarity test to compares two divergent lineages of *Microtus californicus* (Rodentia, Cricetidae)
  https://github.com/Tai-Rocha/Vole

TEACHING EXPERIENCE

2020 | 2019

Instructor

Biology department — PUC-Rio, Brazil

- Ecological Niche Models and Species Distribution Models, theory and practice (40 h)
- Public tools for spatial analysis of biodiversity (40 h)

2020 | 2020

Instructor

ENBT Postgraduate — ENBT

- Ecological niche modeling: theory and practice. Modeling potential species distribution. Niche concept and its application. Algorithms modeling. Source of biotic and abiotic data. Maps and spatial analysis using GIS. Tools for processing and preparing biotic and abiotic data. R programming to modeling. Applications. Model testing and validation (40 h) | https://classroom.google.com/u/0/r/MTI2NTU0NzQ0Nzcw/sort-last-name

2020 | 2020

Guest Lecture

II National Meeting on Biological Collections and their Interfaces

IVB, Brazil

- Ecological niche models and biological conservation in future scenarios of global changes (5 h)

2019 | 2018

Guest lecture.

Biological Sciences- Bachelor's Degree

UVA, Brazil

- Ecological niche models under a biogeography perspective (3 h)
- Ecological Niche Models and Species Distribution Models (3 h)

2018 | 2017

Guest lecture

Biological Sciences- Bachelor's Degree

UFRA, Brazil

- Introduction to Geographic Information System (GIS) (12 h)
- Data for ecological niche models (12 h)

2017 | 2017

Guest lecture

Biological Sciences Undergraduate

UNESA, Brazil

- Introduction to databases which provide input to perform ecological niche models (3 h)

2017 | 2015

High school teacher

Dinâmica Natural

Rio de Janeiro, Brazil

- Science classes

MENTORING EXPERIENCE

2018 | Present

Co-advisor undergraduate

Beta diversity of mountains altitudinal gradient in the State of Rio de Janeiro. Student: Felipe Meira. Advisor: Marinez Ferreira de Siqueira. Instituton: Pontifical Catholic University of Rio de Janeiro | 2020 - present

Influence of the collection effort on the quantification of the terrestrial vertebrate richness in the Atlantic Forest. Student: Caroline Vital da Solidade. Advisor: Mariana Moncassim Vale. Institution: Federal University of Rio de Janeiro | 2018- 2019

RJ, Brazil

2019

Technical Advisor

Geographic Information System (GIS). Student: Tainá Cunha Udine Bernardino. Institution: Federal University of Rio de Janeiro, Brazil.

Geographic Information System (GIS). Student: João Pedro Sousa Cerqueira Cruz. Institution: Federal University of Rio de Janei

RJ, Brazil

SELECTED PUBLICATIONS

2021 | 2021

Global land-use and land-cover data: historical, current and future scenarios

Biodiversity Informatics Journal

• Authored by Vale MM, Lima-Ribeiro MS and Rocha TC.

2020 | 2020

The first botanical explorations of bryophyte diversity in the Brazilian Amazon mountains: high species diversity, low endemism, and low similarity

Biodiversity and conservation

• Authored by Costa D, Nada F.and Rocha TC.

2019 | 2019

A dynamic continental moisture gradient drove Amazonian bird diversification

Science Advances

• Authored by Silva SM , Townsend P, Carneiro L, Burlamaqui TCT, Ribas CC, Sousa-Neves T, Miranda LS, Fernandes AM, d'Horta FM, Araújo-Silva LC, Batista R, Bandeira CHMM, Dantas SM, Ferreira M, Martins DM, Oliveira J, Rocha TC, Sardelli CH, Gregory T, Rêgo PS, Santos MP, Sequeira F, Vallinoto M and Aleixo A.

2019 | 2019

A macroecological approach to evolutionary rescue and adaptation to climate change

Ecography

• Authored by Diniz-Filho JAF, Souza KS, Bini LM, Loyola R, Dobrovolski R, Rodrigues JFM, Lima-Ribeiro Matheus MS, Terribile CL, RangelTF, Bione I, Freitas R, Machado IF, Rocha TC, Lorini ML, ValeMM, Navas CA, Maciel NM, Villalobos F, Olalla-Tarraga MA, Gouveia S.

2015 | 2015

Molecular phylogeny and diversification of a widespread Neotropical rainforest bird group: The Buff-throated Woodcreeper complex, *Xiphorhynchus guttatus/susurrans* (Aves: Dendrocolaptidae)

Molecular Phylogenetics and Evolution

• Authored by Rocha TC, Sequeira F, Aleixo A, Rego PS, Sampaio I, Schneider H, Vallinoto M.

2014 | 2014

Instabilidade Climática e diversidade de espécies na Amazônia

In book: Cenários para Amazônia: clima, biodiversidade e uso da terra

• Authored by Aleixo A, Townsend P, Araújo-Silva LC, Miléo CHM, Batista R, Burlamaqui TCT, Danta SM, Fernandes AM, Ferreira M, Martins DM, Rêgo PS, Ribas CC, Rocha TC, Santos MP, Sardelli CH, Sequeira F, Soares LMS, de Sousa BRS, Sousa SA, Sousa-Neves T, Gregory T, Vallinoto M.

2009 | 2009

Identification and phylogenetic inferences on stocks of sharks affected by the fishing industry off the Northern coast of Brazil

Genetics and Molecular Biology

- Authored by Rodrigues-Filho LF, Rocha TC, Rego PS, Schneider H, Sampaio I, Vallinoto M.

PERIODICAL REVIEWER

2021

Frontiers in Ecology and Evolution

One review

Online

2020 | 2021

Perspectives in Ecology and Conservation

Two reviews

Online

2019 | 2020

Oecologia Australis.

Three reviews

Online

COMMITTEE MEMBER

2021

Leave out or put in - selecting input data to improve ecological niche models applied to conservation and climate change analysis: an approach using the Atlantic Goliath Grouper, Epinephelus itajara (Perciformes)

Final Master committee. Student: Eduardo Motta Carelli Minsky. Advisor: Maria Lucia Lorini. Institution: UNIRIO

UNIRIO, Brazil

2021

Wallacean knowledge shortfall of mammals inthe Central Corridor of the Atlantic Forest

Final undergraduate committee. Student: Inês Motta Comarella. Advisor: Francisco Candido Cardoso Barreto. Institution: UFES

UFES, Brazil

2021

Impacts on the food behavior of birds in the urban, semi-urban and rural environment in the municipal of Capanema, Pará

Final undergraduate committee. Student: Luana Gabriela Costa Bezerra. Advisor: Breno Barros. Institution: UFRA

UFRA, Brazil

2021

Modeling species dis-tribution of plant species as tool for assessing the impacts of climate changes andprogress of Sustainable Development Goals (SDGs) 13 and 15 in Caatinga biome

Master's qualifying examination. Student: Lucas Peixoto Teixeira. Advisor: Marcelo Freire Moro. Institution: UFC

UFC, Brazil

2020 Strategies for conservationof endemic and threatened species: Hindsia glabra K.Schum E Aosa uleana (Urb.Gilg) Weigend

Master's project monitoring committee. Student: Bárbara Piovani Luz Aieta Afonso. Supervisor: Marinez Ferreira de Siqueira. Institution: ENBT/JBRJ

ENBT, Brazil

2018 Seabird habitat use and its association offoraging with Guiana dolphin (Sotalia guianensis) in Sepetiba Bay (2018).

Undergraduate monitoring committee. Student:Leonardo Gomes Pacheco de Sá. Advisor: Maria Alice dos Santos Alves. Co-advisor: Rodrigo Hipolito Tardin Oliveira. Institution: UFRJ

UFRJ, Brazil

SELECTED TALKS & SCIENTIFIC COMMUNICATION

2020 Open tools and databases to analyze biodiversity in space and time

Week curator at Biodiversity in Focus | Webpage for the content shared

Online

2020 Global land-use and land-cover data: historical, current and future scenarios

Final presentation in OLS-2|Slides

Online

2019 Connecting data and experiences: Biodiversity, Information and Communication Technologies in Brazil

RNP 2019 | Slides

Brasília, Brazil

I recently created a website[2] where I will talk about science communication, provide tutorials of different tools and diverse content about science.

SELECTED EVENTS

2021 V International Seminar on Statistics with R

V SER event was recognized by the R Foundation (2018) for its pioneering in Latin America in bringing together an expressive number of R users| Participation as a listener.

Online

2019 Forum of Rede Nacional de Ensino e Pesquisa

RNP 2019. Challenges of digital transformation in teaching and research will lead debates at 2019 RNP Forum| Participation as Guest speaker.

Brasília, Brazil

2018

Workshop Evolutionary Rescue

The workshop was organized by José Alexandre Diniz-Filho professor. The general concept of “evolutionary rescue” refers to the possibility of rapid Darwinian adaptation of populations under a strong effect of environmental stress. Specifically, in this workshop we discussed: 1) the concept of evolutionary rescue and the theoretical models in evolutionary genetics that have been used to study this process, and; 2) the integration of these theoretical models with ecological niche modelling techniques, in a context of climate change and anthropogenic changes in the landscape, 3) their implications for the conservation of diversity in the face of these changes, at different spatial scales. Analyses were implemented for some species of amphibians, such as model organisms, and the possibilities of expanding these analyses to a global scale were discussed, and several sub-projects to be carried out in the coming years on this topic were defined. 20h

Goiânia, Brazil

LIST OF ABBREVIATIONS

ENBT
Escola Nacional de Botânica Tropical
Rio de Janeiro, Brazil

IECOS
Instituto de Estudos Costeiros
Bragança-Pará, Brazil

IVB
Instituto Vital Brazil
Niterói-Rio de Janeiro, Brazil

JBRJ
Instituto de Pesquisas Jardim Botânico do Rio de Janeiro
Rio de Janeiro, Brazil

MPEG
Museu Parense Emílio Goeldi
Belém-Pará, Brazil

OLS
Open Life Science
Global

PUC-Rio
Pontifícia Universidade Católica do Rio de Janeiro
Rio de Janeiro, Brazil

RNP
Rede Nacional de Ensino e Pesquisa
Brazil

UFC
Universidade Federal do Ceará
Ceará, Brasil

- UFES
  Universidade Federal do Espírito Santo
  Espírito Santo, Brasil
- UFPA
  Universidade Federal do Pará
  Pará, Brasil
- UFRA
  Universidade Federal Rural da Amazônia
  Pará, Brasil
- UFRJ
  Universidade Federal do Rio de Janeiro
  Rio de Janeiro, Brazil
- UNESA
  Universidade Estácio de Sá
  Rio de Janeiro, Brazil
- UNIRIO
  Universidade Federal do Estado do Rio de Janeiro
  Rio de Janeiro, Brazil
- UVA
  Universidade Veiga de Almeida
  Rio de Janeiro, Brazil

This resume was made with the R packages **pagedown** and **datadrivencv**.

Code available on GitHub.

Last updated on 2021-08-23. The most recent version of this resume is available here.