

# LAURA CAMILA PACHECO RIAÑO

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*I am a global change ecologist and biogeographer with a deep passion for natural patterns and processes, especially those related to biodiversity distribution in space and time. I have working experience in research and environmental consultancy. My academic research primarily explores vegetation dynamics, mostly alpine environments, spatial modeling, and climate change.*

## EDUCATION

2019 – PRESENT

**PHD CANDIDATE, GLOBAL CHANGE ECOLOGY, DEPARTMENT OF BIOLOGICAL SCIENCES**

UNIVERSITY OF BERGEN, BERGEN, NORWAY.

**Thesis:** Lags in the responses of species assemblages to climate change.

Advisor: John-Arvid Grytnes

**Estimated graduation date:** March 2023

2018

**MASTER'S DEGREE IN BIOLOGICAL SCIENCES: ECOLOGY AND EVOLUTION, UNIVERSITEIT VAN AMSTERDAM, AMSTERDAM, THE NETHERLANDS**

**Graduated projects:**

- Assessing the impact of fragmentation on plant dispersal in Andean mountains. **Score 8/10.**
- Changing land use cover patterns after intensification of the irrigated agriculture in the Rio Grande River watershed – Spain. **Score 7.5/10.**

- Human-wildlife conflict: a review of patterns and priorities in Latin America. **Score 8/10.**

Research master focus on landscape ecology, functional ecology, statistics (GLMs). Analytical and conceptual thinking, with a strong emphasis doing research projects.

2014

**BSC IN ECOLOGY / PONTIFICAL XAVIERIAN UNIVERSITY, BOGOTA, COLOMBIA.**

**Thesis:** *Bird communities, their functional groups, and ecosystem services in a Colombian coffee landscape.* **Score 4.7/5.**

## RESEARCH EXPERIENCE

APRIL 2019 – PRESENT

**PHD CANDIDATE/ DEPARTMENT OF BIOLOGICAL SCIENCES UNIVERSITY OF BERGEN**

*Project: Lags in the responses of plant communities to climate change.*

MAY 2022 – JANUARY 2023

**RESEARCH ASSISTANT / DEPARTMENT OF ENVIRONMENTAL SCIENCES UNIVERSITY OF BASEL / SWITZERLAND**

*Project: Plant changes in the GLORIA arctic/subarctic areas.*

DECEMBER 2017 – OCTOBER 2018

**INTERM / ROYAL BOTANICAL GARDENS KEW- LONDON**

Project: Assessing the impact of fragmentation on plant dispersal in Andean mountains.

Project: functional data gathering and modeling of the maximum dispersion distance for plant species of the GLORIA project.

FEBRUARY 2017 – AUGUST 2017

**INTERM** / INSTITUTE FOR BIODIVERSITY AND ECOSYSTEM DYNAMICS (IBED) AND CENTRE FOR LATIN AMERICAN RESEARCH AND DOCUMENTATION -CEDLA – AMSTERDAM.

Project: Changing land use cover patterns after intensification of the irrigated agriculture in the Rio Grande River watershed – Spain.

**FEBRUARY 2016 – AUGUST 2016**

**RESEARCH ASSISTANT** / ECOLOGY AND TERRITORY RESEARCH GROUP, PONTIFICAL XAVIERIAN UNIVERSITY- BOGOTA.

*Moving from Assessment to Application: - Testing Red List of Ecosystems Application and Integration in Colombia.*  
Responsibilities: Modelling of Colombian Bioclimatic variables and assessment of D criteria: Species distribution models for dispersal interaction between plants- bird, bats, and monkeys. Spatial data processing. Mapping. Report writing of the project for grant givers.

**JANUARY 2014 – JUNE 2016**

**RESEARCH ASSISTANT** / WILDLIFE RESEARCH GROUP - UNIVERSITY OF APPLIED SCIENCES U.D.C.A.-BOGOTA.

Projects:

- Conservation status of *Sphiggurus vestitus*, *Echinoprocta rufescens*, *Coendou sanctamartae* and *Santamartamys rufodorsalis* in Colombia.
- Local and regional distribution of Pacarana (*Dinomys branickii*) and Mountain Paca (*Cuniculus taczanowskii*) in Colombia.

**JUNE 2013 – DECEMBER 2013**

**INTERN** / ALEXANDER VON HUMBOLDT BIOLOGICAL RESOURCES RESEARCH INSTITUTE. APPLIED BIOGEOGRAPHY AND BIOACOUSTICS LABORATORY – BOGOTA.

Project: Colombian protected areas gap analysis for mammals and birds.

## ACADEMIC MERIT: SCHOLARSHIPS, PRIZES, GRANTS AND AWARDS

**OLAF GROLLE OLSEN AND MIRANDA BØDTKER'S SCHOLARSHIP** - University Museum of Bergen to Support PhD Studies. 2021.

**OLAF GROLLE OLSEN AND MIRANDA BØDTKER'S SCHOLARSHIP** - University Museum of Bergen to Support PhD Studies. 2020.

**HOLLAND SCHOLARSHIP** of EP-Nuffic and Dutch Ministry of Education, Culture and Science. Merit award for study profit. 2016.

**COLFUTURO SCHOLARSHIP** for postgraduate degrees. Merit award for study profit. 2016-2018

**CEBIO** - Centro de Ecología y Biodiversidad (Lima-Perú), Partial scholarship to attend The International course of Ecological Niche Modeling. 2015.

## PUBLICATIONS

- **Pacheco-Riaño, L. C.**, Hoistad Schei, F., Flantua, S. G. A., & Grytnes, J.-A. (2023). Lags in the response of plant assemblages to global warming depends on temperature-change velocity. *Global Ecology and Biogeography*, 00, 1– 15. <https://doi.org/10.1111/geb.13653>
- **Pacheco-Riaño, L.C.**, Flantua, S., Grytnes, J.A. Plants in a tough spot: The distribution of plants changes in response to climate change, will it change fast enough?. In press: *Frontiers for Young Minds*.

- Glenner, Henrik & Lützen, Jørgen & **Pacheco-Riaño, L. Camila** & Noever, Christoph. (2021). Expansion of the barnacle *Austrominius modestus* (Darwin, 1854) (Cirripedia, Thoracica, Balanidae) into Scandinavian waters based on collection data and niche distribution modeling. *Aquatic Invasions*. 16. 675-689. 10.3391/ai.2021.16.4.06.
- Etter, A., Andrade, A., Saavedra, K., Amaya, P., Arevalo, P., Cortés, J., **Pacheco-Riaño, L.C** & Soler, D. (2017). Lista roja de ecosistemas de Colombia (Vers. 2.0). *Bogotá DC: Pontificia Universidad Javeriana, Conservación Internacional* <https://doi.org/10.13140/RG.2.10861.08165>.
- **Pacheco-Riaño, L. Camila**. (2015). Bird communities, their functional groups and ecosystem services in a Colombian coffee landscape. 10.13140/RG.2.1.2146.6323.

## IN REVIEW / SUBMITTED OR PREPARATION

- **Pacheco-Riaño, L.C**, Høistad-Schei, F., Flantua, S., Grytnes, J.A., Lagging dynamics in the response of plant assemblages to global warming depends on thermal velocity. In review: *Global Ecology and Biogeography*.
- **Pacheco-Riaño, L.C**, Peyre, G., Suarez, C., Campos D., Fajardo, F., Baruffol M., Norden, N., Aguirre, N., Eguiguren, P., Rumpf, S., Flantua, S., Grytnes, J.A., Climate change dynamics drive species range shifts in The Northern Andes. In preparation.
- **Pacheco-Riaño, L.C.**, Maliniemi T., Rumpf, S., Flantua, S., Grytnes, J.A. Phytosociological and occurrence data show consistent results when modelling thermal responses of plant assemblages. In preparation.
- Salminen, H., Tukiainen, H., Alahuhta, J., Hjort, J., Huusko, K., Grytnes J.A., **Pacheco-Riaño, L.C**, Kapfer, J., Virtanen, R., Maliniemi, T., Assessing local-scale relation between geodiversity and species richness in mountain heaths and tundra. In preparation.

## PRESENTATIONS

### ORAL

**Increasing climatic lag of plant assemblages is linked to the velocity of climate change.** 5th Conference of Nordic Society OIKOS - Aarhus, Denmark. June 2022. Accepted abstract.

**Niche Modeling and coexistence of the Pacarana (*D. branickii*) and the Mountain paca (*C. taczanowskii*) in Colombia.** Modelación de nicho ecológico y área de coexistencia de la guagua loba (*D. branickii*) y del tinajo de páramo (*C. taczanowskii*) en Colombia. Conference talk at II Congreso Colombiano y III Congreso Latinoamericano de Mastozoología. Dec 2015.

**Preliminary results of the potential distribution of porcupines - genus *Coendou* (Rodentia: Erethizontidae) in Colombia.** Resultados preliminares del modelamiento de distribución de diferentes especies de puercoespines del género *Coendou* (Rodentia: Erethizontidae) en Colombia. Conference talk at II Congreso Colombiano y III Congreso Latinoamericano de Mastozoología. Dec 2015.

### POSTER

**Modeling the climatic lag of plant assemblages using phytosociological and occurrence data.** Poster talk at International Biogeography Society - Early Career Biogeographers Conference. October 2021.

## SUPERVISION EXPERIENCE

Project Supervisor Research practice in biology – University of Bergen.

## TEACHING

- 2022 Introduction to Biology
- 2021 R club

## ACADEMIC SERVICE & OUTREACH

### PEER-REVIEW FOR SCIENTIFIC JOURNALS

- Diversity and Distributions

### PROFESSIONAL MEMBERSHIPS

- The International Biogeography Society
- British Ecological Society
- Norwegian Ecological Society (NØF)
- IUCN Commission on Ecosystems Management (CEM) South America
- Colombian National School of Ecologists

### ORGANISER AND CHAIR

- Organizer, Colombian National congress of Ecology. Popayan, **November 2018**
- Organizer, Colombian National congress of Ecology. Bogota, **November 2016**

## RELEVANT WORK EXPERIENCE

MARCH 2019 – APRIL 2019

### ENVIRONMENTAL CONSULTANT / CONSORCIO COMPLEJO CENAGOSO - BOGOTA

*Study to delimit the wetlands complex in Mompox Depression of the Cauca River, in the municipalities of Achí, Altos del Rosario, Barranco de Loba, Montecristo, Pinillos, San Jacinto del Cauca, San Martín de Loba and Tiquisio-Department of Bolivar.*

Responsibilities: GIS processing for land use cover change and vegetation analysis, using different types of satellite imagery and applying a variety of methodologies. Planning and coordination for botanical survey. Report writing.

APRIL 2018 – JUNE 2018 AND JUNE 2017 – AUGUST 2017

### GIS CONSULTANT, BIOGEOECO S.A.S. - BOGOTA

GIS processing and analysis for land use cover change and compensation coefficients established by round table on Sustainable Oil Palm (RSPO) for oil palm plantations in Santander and Boyacá Department- Colombia.

NOVEMBER 2017

### GIS CONSULTANT, ARASARÍ CONSERVACIÓN E INVESTIGACIÓN S.A.S

Land use cover interpretation according to Corine Land Cover methodology adapted for Colombia for 2016 for the section of Mansarovar pipeline in the department of Boyacá.

SEPTEMBER 2014 – AUGUST 2016

### ENVIRONMENTAL AND GIS CONSULTANT /4D ELEMENTS CONSULTORES S.A.S - COLOMBIA.

Responsibilities:

- GIS processing for land use cover change and vegetation analysis, using different types of satellite imagery and applying a variety of methodologies and approaches in different regions in Colombia, mainly Amazon, Guainia and Orinoquia Region.

PhD candidate L. Camila Pacheco Riaño  
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- Estimation of Indexes to assess the ecological and social vulnerability to climate change in Colombia: Deforestation and regeneration rate; Representativeness of protected areas; Land cover change rate, Ecosystem risk assessment.
- Bibliographic review of the flood pulse approaches of the Orinoquia region; elaboration of a Zotero database. GIS Modeling to define the flood pulses in the Colombian Orinoquia using MODIS images.

## DECEMBER 2015

### GIS CONSULTANT, FUNDACION NATURA -COLOMBIA.

*Delimitation of the natural heritage of the Alto Ricaurte province, for nomination as a UNESCO Natural and Cultural Heritage.*

Responsibilities: GIS hydrological analysis of the Alto Ricaurte province

## APRIL 2014 - PRESENT

### CO-FOUNDER AND CO-DIRECTOR/ ARASARÍ CONSERVATION AND RESEARCH-COLOMBIA.

I co-founded an environmental entrepreneurship to link biological sciences and people, using different educational methodologies, creating biodiversity conservation projects with rural communities. I oversee the project management related to the conservation of biodiversity and environmental management.

## LANGUAGE SKILLS

**Spanish** Mother tongue

**English** Fluent

**Italian** Working knowledge

**Norwegian** Limited. Haven't practiced in a long time

## KEY I.T. AND TECHNICAL SKILLS

**Statistics:** Frequentist and Bayesian statistics.

**Data science:** big data and complex long-term ecological datasets management.

**Data Visualization:** R (e.g., ggplot2, shiny, leaflet, tmap, gganimate)

**Microsoft Office:** Excel, Word, PowerPoint, Access.

**Geographic information system:** ArcGIS, ArcGIS pro, ENVI, Quantum GIS, Erdas, Circuitscape, Graphab, Maxcent, Fragstats, R (e.g., sf, sp, raster, terra).

**Programming languages:** R language, Python, basic HTML.

## REFEREES

- Dr. John Arvid Grytnes, Professor, Department of Biological Sciences University of Bergen Norway. Email: [Jon.Grytnes@uib.no](mailto:Jon.Grytnes@uib.no). Phone +47 55 58 81 28.
- Dr. Suzette Flantua, Researcher, Department of Biological Sciences University of Bergen Norway. Email: [Suzette.Flantua@uib.no](mailto:Suzette.Flantua@uib.no).