

# Paul Efreñ

Hi! I'm a **Paul Efreñ Santos Andrade**. Plant Ecologist and data scientist. I am a Peruvian biologist from the Universidad Nacional de San Antonio Abad del Cusco - Peru



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## CONTACT

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🔗 [paulefrensa.rbind.io](http://paulefrensa.rbind.io)  
🐙 [github.com/PaulESantos](https://github.com/PaulESantos)  
🐦 [PaulEfreñSantos](https://twitter.com/PaulEfreñSantos)

## SKILLS

📊 R  
🐍 Python  
🌐 ArcGIS  
📄 CSS  
🔗 Git  
🗄️ SQL  
AutoCAD  
Photoshop

Made with the R package  
*pagedown*.

Source code available:  
[github.com/PaulESantos/cv](https://github.com/PaulESantos/cv).

Updated: 2022-01-10.

## EDUCATION

- 2018 | **MSC., IN ECOLOGY & ENVIRONMENTAL MANAGEMENT**  
Universidad Nacional San Antonio Abad 📍 Cusco, Peru
- 2012 | **B.S., BIOLOGY**  
2008 | Universidad Nacional San Antonio Abad 📍 Cusco, Peru

## RESEARCH & DATA SCIENCE EXPERIENCE

- 2020 | **RESEARCH ASSISTANT**  
2019 | **Universidad de Arizona**  
**Universidad de Bergen**  
**Project:**  
Roles of inter and intra specific variability in the composition and functional diversity of high Andean plants of the Puna in the Manu National Park 📍 Cusco, Peru
- 2017 | **RESEARCH ASSISTANT**  
2016 | **University of Miami**  
Department of Biology 📍 Cusco, Peru  
**Project:**  
Vulnerability to forest drought dominated by Bamboo: Detection with remote sensing and functional adaptation of the plant community in the Amazon - Andean gradient compared to forest without bamboo
- 2016 | **RESEARCH ASSISTANT**  
**University of Oxford** 📍 Cusco, Peru  
GEM Global Ecosystems Monitoring Network  
**Project:**  
RAINFOR - GEM: A project to understand the carbon balance in the Andean and Amazonian forests

2015

● **RESEARCH ASSISTANT**

**The Open University**

Department of Environment, Earth & Ecosystems

Centre for Earth, Planetary, Space & Astronomical Research

**CEPSAR**

· **Project:**

Evaluate the contribution of tree- stem CH<sub>4</sub> and N<sub>2</sub>O emissions to the total ecosystem emissions from a range of tropical rainforests on the south-eastern slopes of the Andes

📍 Cusco, Peru

2015

● **RESEARCH ASSISTANT**

**University of Oxford**

Environmental Change Institute

**University of Leeds**

**James Cook University**

· **Project:**

T- Forces: Changes of tropical forests in the land system

📍 Cairns QLD, Australia

2015  
|  
2013

● **RESEARCH ASSISTANT**

**University of Miami**

Department of Biology

· **Project:**

Factors that influence the dynamics and location of the forest line between the forest and the Puna on Parque Nacional del Manu – Peru at Acjanaco, Qurqurpampa and Tres Cruces (4ta Period)

📍 Cusco, Peru

2014

● **RESEARCH ASSISTANT**

**University of Oxford**

Environmental Change Institute

**University of Leeds**

· **Project:**

T- Forces: Changes of tropical forests in the land system

📍 Oxapampa, Peru

2013  
|  
2010

● **RESEARCH ASSISTANT**

**University of Aberdeen**

Institute of Biological and Environmental Sciences

· **Project:**

Are tropical uplands regional hotspots of methane and nitrous oxide?

📍 Cusco, Peru

2013

● **RESEARCH ASSISTANT**

**University of Oxford**

Environmental Change Institute

**Pontificia Universidad Católica del Perú**

Instituto de Ciencias de la Naturaleza Territorio y Energía Renovables

📍 Cusco, Peru

· CHAMBASA Project - CHallenging Attempt to Measure Biotic Attributes along the Slope of the Andes

2012  
|  
2011

## RESEARCH ASSISTANT

**University of Edinburgh**  
School of Geo Sciences

📍 Cusco, Peru

### · Project:

Respiration of soil with the Multiplexer Licor along a gradient of elevation of the Andes to the Amazon



## TEACHING AND PROJECT MANAGEMENT

2021

### INTRODUCCIÓN A LA PROGRAMACIÓN CON R TIDYVERSE

Online workshop

📍 Remote

· Taught an introduction to R with Tidyverse.

2021

### VISUALIZACIÓN DE DATOS

Online workshop

📍 Remote

2019

### MANIPULACION DE DATOS

Museo De Historia Natural

📍 Cusco, Peru

2019

### UNA INTRODUCCION A LA VISUALIZACION DE DATOS

Museo De Historia Natural

📍 Cusco, Peru



## TALKS

2021

### ASSESING LONG-TERM SHIFTS IN FUNCTIONAL COMPOSITION AND IMPACTS ON CARBON AND WATER CYCLING IN THE SOUTHERN ROCKY MOUNTAINS

AGU Fall Meeting 2021

📍 New Orleans, LA  
Online Everywhere

· Julia Chacon-Labelle, Cesar Hinojo Hinojo, **Paul Efren Santos**, Lindsay Backhaus, Sandra Milena Duran, Lorah Seltzer, Alex Brummer, Amanda Henderson, Charles F. Rick Williams, Nicola Falco, Haruko M Wainwright, Eoin Brodie, Susan S. Hubbard, Kenneth Hurst Williams, Vigdis Vandvik and Brian Joseph Enquist

2020

### INTRODUCCIÓN A LA ECOLOGÍA BASADA EN RASGOS FUNCIONALES

ZOE Asociación para la Investigación y Conservación

📍 Remote

I have taught in higher education settings, using intuitive and data-driven instruction.

- 2020 • **INTRODUCTION TO TIDYVERSE**  
Plant Functional Trait Course - PFCT5  Cusco, Peru
- 2020 • **ASSESSING HOW LONG-TERM SHIFTS IN SPECIES AND FUNCTIONAL COMPOSITION HAVE IMPACTED CARBON AND WATER CYCLING THE SOUTHERN ROCKY MOUNTAINS**  
AGU Fall Meeting 2020  Online  
· Julia Chacon-Labela, Connor Wilson, Lindsay Backhaus, **Paul Efren Santos - Andrade**, Sandra Milena Duran, Alex Brummer, Amanda Henderson, Lorah Seltzer, Nicola Falco, Haruko M. Wainwright, Eoin Brodie, Charles F. Williams, Susan S. Hubbard, Vigdis Vandvik, Brian Joseph Enquist, Kenneth Hurst Williams
- 2020 • **ASSESSING THE SENSITIVITY OF EVAPOTRANSPIRATION TO SHIFTS IN PLANT TRAITS, CHANGING CLIMATE, AND EARLIER SNOWMELT: LONG-TERM OBSERVATIONS FROM A 1,000M ELEVATION GRADIENT IN THE EAST RIVER WATERSHED, COLORADO, USA**  
AGU Fall Meeting 2020  Online  
· Brian J. Enquist, Julia Chacon-Labela, Alex Brummer, Sandra Milena Duran, **Paul Efren Santos-Andrade**, Nicola Falco, Amanda Henderson, Haruko Murakami Wainwright, Vigdis Vandvik, Eoin Brodie, Susan S Hubbard, Kenneth Hurst Williams



## PUBLICATIONS

- 2021 • **TROPICAL TREE GROWTH SENSITIVITY TO CLIMATE IS DRIVEN BY SPECIES INTRINSIC GROWTH RATE AND LEAF TRAITS**  
Global Change Biology  
· Bauman, D., Fortunel, C., Cernusak, L. A., Bentley, L. P., McMahon, S. M., Rifai, S. W., Aguirre-Gutiérrez, J., Oliveras, I., Bradford, M., Laurance, S. G. W., Delhaye, G., Hutchinson, M. F., Dempsey, R., McNellis, B. E., **Santos-Andrade, P. E.**, Ninantay-Rivera, H. R., Chambi Paucar, J. R., Phillips, O. L., & Malhi, Y.
- 2021 • **REDUCED TREE DENSITY AND BASAL AREA IN ANDEAN FORESTS ARE ASSOCIATED WITH BAMBOO DOMINANCE**  
Forest Ecology and Management  
· Belen Fadrique, **Paul Santos-Andrade**, William Farfan-Rios, Norma Salinas, Miles Silman, Kenneth J. Feeley

2018

## TROPICAL FOREST LEAVES MAY DARKEN IN RESPONSE TO CLIMATE CHANGE

Nature Ecology & Evolution

· Christopher E. Doughty, **Paul Efren Santos-Andrade**, Alexander Shenkin, Gregory R. Goldsmith, Lisa P. Bentley, Benjamin Blonder, Sandra Díaz, Norma Salinas, Brian J. Enquist, Roberta E. Martin, Gregory P. Asner, Yadvinder Malhi

2017

## CAN LEAF SPECTROSCOPY PREDICT LEAF AND FOREST TRAITS ALONG A PERUVIAN TROPICAL FOREST ELEVATION GRADIENT?

Journal of Geophysical Research: Biogeosciences

· Doughty C.E., **Santos Andrade P.E.**, Goldsmith G.R., Blonder B., Shenkin A., Bentley L.P., Chavana Bryant C., Huaraca Huasco W., Díaz S., Salinas N., Enquist B.J., Martin R., Asner G.P., Malhi Y.



## POSTER PRESENTATIONS

2021

## EVALUATING THE EFFECT OF SAMPLING SCALE TO QUANTIFY DIFFERENT COMPONENTS OF PLANT BIODIVERSITY WITH IMAGING SPECTROSCOPY.

AGU Fall Meeting 2021

📍 New Orleans, LA  
Online Everywhere

· Sandra M Duran, Nicola Falco, **Paul Efren**, Jesus N Pinto Ledezma, Haruko M Wainwright, Heidi Steltzer, Eoin Brodie, Brian Joseph Enquist and Jeannine Cavender-Bares.

2021

## HYPERSPPECTRAL DERIVED TRAITS AND VEGETATION INDICES PREDICT RATES OF ABOVE- AND BELOW-GROUND CARBON FLUXES IN ALPINE MEADOWS

AGU Fall Meeting 2021

📍 New Orleans, LA  
Online Everywhere

· Sandra M Duran, Nicola Falco, Sergio Marconi, **Paul Efren**, Amanda Henderson, Haruko M Wainwright, Heidi Steltzer, Eoin Brodie, Scott R Saleska and Brian Joseph Enquist.