

# Natalia de Aguiar Campos

PhD Candidate, Natural and Physical Sciences

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[Lattes](#) | [ORCID](#) | [Academic portfolio](#)

## SUMMARY

- Broadly trained tropical forest ecologist with extensive experience analysing large ecological datasets for research and environmental consulting.
- Current research focuses on how prolonged drought influences tree water use in Australian tropical rainforests.
- Background includes quantifying biomass stocks in tropical dry forests and publications on South American biogeography and evolutionary ecology.
- Experienced in designing, conducting, and analysing forest inventories for environmental licensing and assessment projects.

## EDUCATION

**James Cook University**, Australia  
Jul 2023 - Present

**PhD Candidate in Natural and Physical Sciences**  
**(completion expected in Feb 2027)**

**Advisors:** Prof Susan G. W. Laurance, Prof Will Edwards  
**Thesis:** Drought effects on rainforest plant water use

**Universidade Federal de Lavras**,  
Brazil  
Feb 2018 - Feb 2020

**MSc in Tropical Forest Ecology**

**Advisors:** Prof Rubens Manoel dos Santos, Dr Vanessa Leite Rezende  
**Dissertation:** The influence of intrinsic and extrinsic factors on dry forest tree community structure

**Universidade Federal de Lavras**,  
Brazil  
**University of Otago**, New Zealand  
Feb 2012 - Dec 2017

**BSc in Forest Engineering**

**Advisors:** Prof Rubens Manoel dos Santos, Dr Jean Morel  
**Dissertation:** Ecological dominance among tropical dry forest trees:  
The influence of climatic and soil variables

## PUBLICATIONS

1. **de Aguiar-Campos N**, Ishida Y, Edwards W, Laurance S (*preprint, under review*) Crown exposure drives sap flow variability among nearly identical trees in a lowland tropical rainforest. *Hydrological Processes*.
2. Maia VA, **de Aguiar-Campos N**, Coelho de Souza F, Souza CR, Prado-Junior J, Farrapo CL, Cirne-Silva TM, Morel JD, Gianasi FM, ..., Santos RM (*accepted*) Temporal trends of carbon stock, sink, and tree species diversity in tropical and subtropical Brazilian forests. *Nature Ecology and Evolution*.
3. **de Aguiar-Campos N**, Edwards W, Laurance S (2025) Tropical forest transpiration estimates are geographically, ecologically and methodologically biased: a systematic review of sap flow research. *Agricultural and Forest Meteorology* 373: 110738.
4. Santos AB, de Souza CR, de Souza FC, **de Aguiar-Campos N**, Maia VA, Fagundes NC, Pais AD, Pires GG, Morelli MC, Morel JD, dos Santos RM (2025) Taxonomic identity, but not evolutionary relatedness, determines the carbon stock and uptake of tropical forests trees. *Acta Oecologica* 126:104065.

## PUBLICATIONS (continued)

5. de Souza CR, de Coelho de Souza F, Dexter KG, Maia VA, **de Aguiar-Campos N**, Farrapo CL, Santos AB, Paula GG, Morel JD, Fagundes NC, Santos PF (2025) Beyond the “resprouter versus non-resprouter” dichotomy: On the prevalence and evolutionary fingerprint of resprouting in tropical dry forest trees. *Ecological Research* 39(1):84-96.
6. Bennett AC, Rodrigues de Sousa T, Monteagudo-Mendoza A, Esquivel-Muelbert A, Morandi PS, Coelho de Souza F, ..., **de Aguiar-Campos N**, ..., Phillips OL (2023) Sensitivity of South American tropical forests to an extreme climate anomaly. *Nature Climate Change* 13(9):967-74.
7. Araújo FC, **de Aguiar-Campos N**, Souza CR, Paula EP, Santos RM (2022) Old climatically-buffered infertile landscapes (OCBILs): more than harsh habitats, Atlantic Forest inselbergs can be drivers of evolutionary diversity. *Journal of Mountain Science* 19(9): 2528-2543
8. Santos AB, Maia VA, de Souza CR, Fagundes NC, Gianasi FM, Pais AD, **de Aguiar-Campos N**, Pires GG, Girardelli DT, Morel JD, Morelli MC (2021) Disentangling spatial, environmental and historical effects on tropical forest tree species turnover. *Journal of Plant Ecology* 14(4):717-29.
9. Souza CR, Maia VA, **de Aguiar-Campos N**, Santos AB, Rodrigues AF, Farrapo CL, Gianasi FM, de Paula GG, Fagundes NC, Silva WB, Santos RM (2021) Long-term ecological trends of small secondary forests of the atlantic forest hotspot: A 30-year study case. *Forest Ecology and Management* 489:119043.
10. **de Aguiar-Campos N**, Coelho de Souza F, Maia VA, Rezende VL, Souza CR, de Paula GGP, Santos PF, Silva WB, Menino GCO, Santos RM (2021) Evolutionary constraints on tree size and aboveground biomass in tropical dry forests. *Journal of Ecology* 109(4): 1690-1702.
11. Maia VA, Santos AB, **de Aguiar-Campos N**, Souza CR, Morel JD, Oliveira MC, Alencar Fagundes NC, Gianasi FM, Fontes MA, Santos RM (2021) Climate and soil mediate the effects of liana density on forest dynamics. *Biotropica* 53(2):509-19.
12. Maia VA, Santos ABM, **de Aguiar-Campos N**, Souza CR, Oliveira MCF, Coelho PA, Morel JD, Costa LS, Farrapo CL, Fagundes NCA, de Paula GGP, Santos PF, Gianasi FM, Silva WB, Oliveira F, Girardelli DT, Araújo FC, Vilela TA, Pereira RT, Silva LCA, Menino GCO, Garcia PO, Fontes MAL, Santos RM (2021) The carbon sink of tropical seasonal forests can be under threat *Science Advances* 6(51): eabd4548.
13. **de Aguiar-Campos N**, Maia VA, da Silva WB, Souza CR, Santos RM (2020) Can fine-scale habitats of limestone outcrops be considered litho-refugia for dry forest tree lineages? *Biodiversity and Conservation* 29(3): 1009–1026.
14. Maia VA, de Souza CR, **de Aguiar-Campos N**, Fagundes NCA, Santos ABM, Pires, GG, Santos PF, Silva WB, Menino GCO, Santos RM (2020) Interactions between climate and soil shape tree community assembly and above-ground woody biomass of tropical dry forests. *Forest Ecology and Management* 474: 118348.
15. Maia VA, **de Aguiar-Campos N**, de Souza CR, Fagundes NC, Santos AB, de Jesus Rodrigues Pais A, Morel JD, Farrapo CL, dos Santos RM (2020) Temporal shifts on tree species niches: how do they affect species dynamics and community diversity? *Plant Ecology* 221(1):25-39.
16. Morel JD, Pereira JA, dos Santos RM, **de Aguiar-Campos N**, Machado EL (2018) Functional characterisation of an anthropised Atlantic Forest fragment. *Journal of Tropical Forest Science* 30(4):537-45.

## PROFESSIONAL AND ACADEMIC EXPERIENCE

I have served as a **teaching assistant** at several institutions in Australia and Brazil, working with students from first-year undergraduate level to master's candidates. My responsibilities include coordinating field campaigns, marking assignments, and guiding students through R programming workshops.

**College of Science and Engineering, James Cook University**, Cairns, QLD, Australia  
Jul 2024 - Present

**Subjects:** Statistics and Data Visualisation in R, Quantitative Ecology, Field Ecology, Introduction to Biology  
**Reference:** Prof Susan Laurance, Prof Lin Schwarzkopf, Prof Will Edwards, Prof Lucas Cernusak

**School for Field Studies**, Danbulla, QLD, Australia  
Aug 2023

**Subjects:** Plant Morphology and Systematics  
**Reference:** Dr David Tng, Dr Deborah Apgaua

**Departamento de Ciências Florestais, Universidade Federal de Lavras**, Lavras, MG, Brazil  
Dec 2016 - Jul 2017, Mar - Aug 2014

**Subjects:** Dendrology, Plant Morphology and Systematics  
**Reference:** Prof Rubens Santos, Prof Mariana Mansanares

I worked as a **forest engineer** both independently and within an organisation, with responsibilities that included designing, collecting, analysing, and reporting forest inventories for biomass quantification in environmental licensing projects.

**Amplo Engenharia e Gestão de Projetos Ltda.**, Belo Horizonte, MG, Brazil  
Jul 2021 - May 2023

Technical role involving fieldwork in the Brazilian Cerrado and Atlantic Forest, data analysis and reporting for Environmental Impact Assessments.  
**Reference:** Flavio Gontijo

**Independent contractor**, Lavras, MG, Brazil  
Aug 2020 - Jun 2021

Conducted forest inventories in Brazil's Atlantic Forest as a consulting service for private companies aiming to comply with Brazil's environmental legislation

I served as an **intern** throughout my undergraduate degree in areas related to Ecology and Botany.

**Departamento de Ciências Florestais, Universidade Federal de Lavras**, Lavras, MG, Brazil  
Aug 2016 - Dec 2019

Collected and analysed forest inventory data from Atlantic Forest, Cerrado and Caatinga (dry forest) tree communities in Brazil  
**Reference:** Prof Rubens Santos

**Department of Geography, University of Otago**, New Zealand  
Dec 2015 - Feb 2016

Assisted graduate students in fieldwork in remote locations, assembled a reference herbarium collection of alpine plants and wrote a literature review on broadleaved invasive species in New Zealand  
**Reference:** Prof Ralf Ohlemüller

**Herbário ESAL, Universidade Federal de Lavras**, Brazil  
Mar 2014 - Aug 2014

Collected and assembled plant specimens for storage in the herbarium collection.  
**Reference:** Prof Mariana Mansanares

## GRANTS & SCHOLARSHIPS

<b>James Cook University, Australia</b> Jul 2023 - Jan 2027	<b>Research Training Program Scholarship</b> Competitive full-ride PhD scholarship for international students in Australia (~AU\$ 250,000 tuition fee waiver + living stipend)
<b>CAPES, Brazil</b> Mar 2018 - Feb 2020	<b>Master's Scholarship</b> Scholarship awarded to top-ranking students in Master's program selection (R\$ 36,000 living stipend)
<b>Universidade Federal de Lavras, Brazil</b> Mar 2017 - Aug 2017	<b>Undergraduate Teaching Assistantship</b> Competitive assistantship position to support field-based lectures in Dendrology.
<b>CNPq, Brazil</b> Feb 2015 - Feb 2016	<b>Science Without Borders Scholarship</b> Competitive scholarship for a one-year undergraduate exchange program in a foreign university (~NZ\$ 60,000)
<b>CNPq, Brazil</b> Aug 2012 - Jul 2013	<b>Young Talents for Science Scholarship</b> Merit-based scholarship for early undergraduate involvement in scientific research (R\$ 4,800 living stipend)

## TALKS

<b>Annual Meeting of the Ecological Society of Australia (ESA2025)</b> Nov 2025	<b>Title:</b> Canopy configuration affects tropical forest transpiration estimates <b>Authors:</b> <u>de Aguiar Campos N</u> , Ishida YF, Edwards W, Laurance S
<b>Annual Conference of Zoology and Ecology North Queensland (ZENQ)</b> Sep 2023	<b>Title:</b> From dry to wet: exploring the climate spectrum of tropical forests across different continents (awarded as <b>best proposal talk</b> ) <b>Authors:</b> <u>de Aguiar Campos N</u>
<b>Simposio Informal Sobre el Bosque Seco Tropical (online)</b> May 2021	<b>Title:</b> <i>¿Especies de árboles emparentadas comparten características ecológicas en los bosques secos de Brasil?</i> (presented in <b>Spanish</b> ) <b>Authors:</b> <u>de Aguiar Campos N</u>

## SKILLS

<b>Programming</b>	R and RStudio (proficient) Python (foundational) HTML, CSS and JavaScript (foundational) Git and GitHub
<b>Data analyses</b>	Generalised linear mixed effects models (Bayesian and frequentist) Generalised additive models (Bayesian and frequentist) Time series analysis Forest biomass and carbon estimation Phylogenetic metrics for community ecology Ecological metrics

## SKILLS (continued)

**Fieldwork** Sap flow sensors  
Point dendrometers  
Scholander pressure chambers  
LiCOR  
Forest censusing (adhering to ForestPlots.net guidelines)  
Tree identification

**Peer reviewing** *Biodiversity and Conservation*  
*Scientific Reports*  
*Plant Ecology and Diversity*  
*Écoscience*  
*Acta Botanica Brasilica*

**Languages** Portuguese (native)  
English (fluent)  
Spanish (fluent)

## ADDITIONAL TRAINING

**Queensland Cyber Infrastructure Foundation, Australia**  
Feb 2026

**Plotting and Programming with Python:** Basic principles of Python for data wrangling and visualisation in Spyder  
**Instructor:** Jason Bell, Pauline Lawrey  
**Course load:** 16 hours

**James Cook University, Australia**  
Sep 2025

**Bayesian Statistics in R and RStudio:** Bayesian GLMs, GLMMs, GAMs, GAMMs and ML models applied to ecological data sets; introduction to Git and GitHub  
**Instructor:** Dr Murray Logan  
**Course load:** 72 hours

**Queensland University of Technology, Australia**  
Apr 2025

**Coding for Researchers:** Principles of Git and GitHub for research and practical guidance on building an academic portfolio using HTML, CSS and JavaScript  
**Instructor:** Aleksandra Olechnowicz  
**course load:** 12 hours

**James Cook University**  
Feb 2025

**Conservation Filmmaking:** Scripting, storyboarding, shooting and postproduction of conservation-focused filmmaking  
**Instructor:** Laurie Hedges  
**Course load:** 14 hours

**Universidade Federal de Lavras, Brazil**  
Mar 2020

**Science Writing Workshop:** Effective techniques for writing scientific manuscripts and increasing visibility of research findings  
**Instructor:** Prof Jos Barlow, Prof Emma Sayer, Prof Rafael Zenni  
**Course load:** 21 hours

**Universidade Federal de Lavras, Brazil**  
Jul 2018

**Environmental Niche Modelling in R:** Manipulation of species occurrence data sets and raster files for environmental niche modelling using different algorithms  
**Instructor:** Prof Thadeu Sobral-Souza  
**Course load:** 32 hours

## **MEMBERSHIPS**

Association for Tropical Biology and Conservation (ATBC) (2024-Present)

British Ecological Society (BES) (2025-Present)

Ecological Society of Australia (ESA) (2025-Present)