Stanford



Rodrigo Bello Carvalho

Ph.D. Student in Biology, admitted Autumn 2023

Bio

BIO

I am a field biologist deeply passionate about wildlife ecology and conservation. My academic and professional journey bridges research, fieldwork, and environmental stewardship across some of the world's most biodiverse ecosystems.

My work focuses on understanding the functional role of megafauna (large-bodied vertebrates) in shaping tropical ecosystems through processes such as frugivory, herbivory, and seed dispersal. I am particularly interested in how savanna biodiversity, structure, and functioning respond to the loss of megafauna (defaunation), and how ecological insights can inform restoration and conservation strategies in a rapidly changing world.

I hold a Master's degree in Biodiversity Conservation and Management from the University of Oxford (2021), and graduated with honors in Biological Sciences (B.Sc., 2017) and Biology Teaching (B.Ed., 2018) from the University of Brasília (UnB). My ecological journey began at UnB's Ecosystem Ecology Lab (2014–2018) under Prof. Mercedes Bustamante, where I first engaged with savanna ecology in the Cerrado.

Driven by pursuing applied conservation, I worked at the Brasília Zoological Garden Foundation (2018) and taught Science and Biology in Brasília's private schools (2019), experiences that deepened my belief in connecting ecology and conservation with communities.

At Oxford's Ecosystems Lab (2020–2021), I studied defaunation and seed dispersal in the Cerrado, working under Dr. Imma Oliveras and Prof. Yadvinder Malhi. I later joined Brazil's Chico Mendes Institute for Biodiversity Conservation (ICMBio) as an environmental analyst and park ranger (2022–2023), where I was based in the Western Brazilian Amazon, engaging in biodiversity monitoring, sustainable management of natural resources, and frontline conservation enforcement of three Conservation Units within the Purus River Basin.

Currently, I am pursuing a PhD in Biology at Stanford University in the Dirzo Lab, where my research explores megafauna-ecosystem interactions across Brazilian and African savannas, with a focus on how defaunation reshapes ecosystems. I also collaborate with UNESP's Bird Ecology Lab on frugivory, seed dispersal, and ecological restoration in the Atlantic Forest.

HONORS AND AWARDS

- Philippe S. Cohen Graduate Fellowship, Jasper Ridge Biological Preserve (2024)
- Alwyn Gentry Award – Best Student Oral Presentation (Honorable Mention), Association for Tropical Biology and Conservation (ATBC) (2022)
- J. Bossanyi Bursary in Environmental Conservation, St Peter's College, University of Oxford (2021)

- Institutional Scholarship Program for Scientific Initiation, National Council for Scientific and Technological Development (CNPq) (2017)
- Institutional Scholarship Program for Scientific Initiation, National Council for Scientific and Technological Development (CNPq) (2016)
- Young Talents for Science Scholarship, Coordination for the Improvement of Higher Education Personnel (CAPES) (2015)

Research & Scholarship

LAB AFFILIATIONS

- Rodolfo Dirzo, Dirzo Lab (9/18/2023)

Professional

WORK EXPERIENCE

- Environmental Analyst - Chico Mendes Biodiversity Conservation Institute (July 2022 - March 2023)
- Science and Biology Teacher - Maxwell School (June 2019 - November 2019)
- Zookeeper - Brasilia Zoological Garden Foundation (February 2018 - February 2019)

Publications

PUBLICATIONS

- **Use of devegetation in framing vegetation loss rather than deforestation.** *Conservation biology : the journal of the Society for Conservation Biology*
  Béllo Carvalho, R., Bomfim Machado, R., Dirzo, R., Aguiar, L. M.
  2026: e70307
- **Limited changes to mammal diel activity during COVID-19 lockdown in an urban preserve** *JOURNAL OF MAMMALOGY*
  Bello Carvalho, R., Frangos, C., Sonawane, C., Hebert, T., Hadly, E. A., Dirzo, R.
  2026
- **The Potential of Generalist and Disturbance-Tolerant Seed Dispersers in the Restoration of Neotropical Degraded Areas** *Biotropica*
  Béllo Carvalho, R., Pizo, M. A.
  2026; 58 (3)
- **Fueling the discussion: are fire-fuel clearings impacting mammal activity at Jasper Ridge Biological Preserve, California, USA?** *MAMMAL RESEARCH*
  Bello Carvalho, R., Hebert, T., Dirzo, R.
  2025; 71 (1)
- **The costs of connection: Socioenvironmental risks of the Brazil-China railway across the Amazon.** *Ambio*
  Béllo Carvalho, R.
  2025
- **Brazil on fire: Igniting awareness of the 2024 wildfire crisis.** *Journal of environmental management*
  Bello Carvalho, R., Oliveras Menor, I., Schmidt, I. B., Berlinck, C. N., Genes, L., Dirzo, R.
  2025; 389: 126190
- **Between hype and hope: De-extinction is a tool, not a panacea for the biodiversity crisis** *Biological Conservation*
  Béllo Carvalho, R.
  2025; 309 (111307)
- **Frugivory by the Crab#Eating Fox (Cerdocyon thous) and Its Seed Dispersal Potential: A Review** *Mammal Review*
  Béllo Carvalho, R., Chesini Rossi, L., Pizo, M. A.
  2025
- **From a Brazilian lens: Reflections on Chief Raoni's visit to Stanford.**
  Béllo Carvalho, R., Genes, L.

Stanford Daily.
2024

- **Spillover of avian seed dispersers between secondary forests and degraded areas in a tropical island** *ACTA OECOLOGICA-INTERNATIONAL JOURNAL OF ECOLOGY*
  Carvalho, R., Alves, K. J. F., Pizo, M. A.
  2023; 121

- **Frugivory and seed dispersal in the Cerrado: Network structure and defaunation effects** *BIOTROPICA*
  Carvalho, R., Malhi, Y., Menor, I.
  2023; 55 (4): 849-865

- **Seed removal, seed dispersers, and the allocation of tissues in Myrtaceae seeds** *BIOTROPICA*
  Carvalho, R., Pizo, M. A.
  2023; 55 (3): 719-728

- **Trilhas-Temáticas: Ensinando Ciências e Biologia no Jardim Zoológico de Brasília**
  Bello Carvalho, R.
  Independently published.2019

PRESENTATIONS

- Frugivory and Seed Dispersal in the Cerrado: Network Structure and Defaunation Effects - 58th Meeting of the Association for Tropical Biology and Conservation
- Being a Big Deal: The Legacy of the South-American Megafauna - University of Oxford
- Dispersal Syndrome of Woody Plants in Two Cerrado Phytophysiognomies: Interactions with Frugivorous Birds, Bats, and Non-volant Mammals - University of Brasília
- Brasília Zoological Garden as an Environmental Education Tool and the Challenges of Reconciling the Objectives of Schools and Zoos - 42nd Congress of the Brazilian Society of Zoos and Aquariums
- Ecological Interactions of Cerrado sensu stricto Trees with Leaf Fungi - 23rd Congress of Scientific Initiation of the University of Brasília & 14th Congress of Scientific Initiation of Distrito Federal