

Ciro Cabal

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Education

- 2021** PhD in Ecology and Evolutionary Biology, Princeton University, USA.
- 2018** MA in Ecology and Evolutionary Biology, Princeton University, USA.
- 2013** MS in Ecology, Universidad Autónoma de Madrid & Universidad Complutense de Madrid, Spain.
- 2011** BS in Biology (Plant Biology & Environmental Sciences), Universidad Complutense de Madrid, Spain.
- 2003** Baccalaureat Général série Scientifique, Académie de Toulouse, France.

Courses

- 2018** DNA Metabarcoding Data Analysis Course (10 hours, AllGenetics)
- 2016** Factorial design and experiment analysis in natural sciences (41 hours, Museo Nacional de Ciencias Naturales-CSIC)
- 2015** Applied statistics with R (120 hours, Universidad Autónoma de Madrid)

Professional Experience

- current** **Juan de la Cierva postdoctoral fellow**, Área de Biodiversidad y Conservación, Universidad Rey Juan Carlos (URJC)
- 2021-22** **Postdoctoral Research Associate** joint Princeton University High Meadows Environmental Institute (HMEI) – Museo de Ciencias Naturales, Spanish National Research Council (CSIC)
- 2016-21** **PhD Candidate** in the Pacala Lab, in the Princeton University department of Ecology and Evolutionary Biology (EEB).
- 2015-16** **Trainee researcher** in the Global Change Ecology research group at the MNCN-CSIC, evaluating the effects of nitrogen depositions in Mediterranean semiarid ecosystems.
- 2013** **Trainee researcher** assessing the Global Strategy for Plant Conservation (Plants 2020 GSPC), target 2 and 5 in Spain. Project developed for Tragsatec and the Spanish Ministry of Environment.
- 2011-12** **Senior thesis research** modeling carbon uptake and storage in a Spanish Holm Oak stands, with the Analysis of Ecological Systems: Methodology, Dynamics & Management research group, Universidad Complutense de Madrid, Spain.

2010-11 **Trainee researcher** developing the program of Ecological Monitoring of Spanish National Parks, mapping vegetation of Monfragüe. Project developed for Tragsatec and the Spanish Ministry of Environment.

Congresses and Workshops

Oct 2021	Congreso de la Asociación Española de Ecología Terrestre (AEET) (Plasencia, Spain) - attendee
Jun 2018	A Coruña DNA Metabarcoding Workshop (A Coruña, Spain) - attendee
Jun 2016	CAPERmed II, Committee on Air Pollution Effects Research on Mediterranean Ecosystems (Brescia, Italy) - poster
Oct 2013	Congreso de Biología de la Conservación de Plantas SEBiCoP VI (Murcia, Spain) - poster

Teaching Experience

Fall 2019	Internship adviser of Senior Undergraduate Student, Laura Rodríguez Torres, Universidad Rey Juan Carlos (150 hours)
Spring 2019	Princeton University EEB346 Biology of Coral Reefs (34 hours)
Spring 2019	Director of Final Senior Thesis "Root Foraging Behaviour in Peppers" by Aurora de Castro, Universidad Complutense de Madrid (225 hours)
Summer 2018	Internship adviser of Senior Undergraduate Student, Aurora de Castro, Universidad Complutense de Madrid (150 hours)
Spring 2017	Princeton University ENV200 The Environmental Nexus (34 hours)
Fall 2016	Princeton University EEB211 Life on Earth: Chaos and Clockwork of Biological Design (34 hours)

Awards and Honors

2016	The May Fellowship in the department of Ecology and Evolutionary Biology, Princeton University
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Publications

Published in peer-reviewed journals:

Ciro Cabal, 2022. **Root Tragedy of the Commons: What is it and Where Might it Occur?** Frontiers in plant Science DOI: 10.3389/fpls.2022.960942

Ciro Cabal, Laura Rodríguez-Torres, Neus Marí-Mena, Antonio Más-Barreiro, Antón Vizcaíno, Joaquín Vierna, Fernando Valladares, and Stephen W Pacala, 2022. **Comparing two field protocols to measure individual shrubs' root density distribution.** Plant and soil DOI: 10.1007/s11104-022-05657-1

Ricardo Martínez-García, **Ciro Cabal**, Justin M Calabrese, Emilio Hernández-García, Corina E Tarnita, Cristóbal López, Juan A Bonachela, 2022. **Integrating theory and experiments to link local mechanisms and ecosystem-level consequences of vegetation patterns in drylands**. Chaos, Solitons and Fractals DOI: 10.1016/j.chaos.2022.112881

Ciro Cabal, Hannes PT De Deurwaerder, and Silvia Matesanz, 2021. **Field methods to study the spatial root density distribution of individual plants**. Plant and Soil, DOI: 0.1007/s11104-021-04841-z

Ciro Cabal, Ricardo Martínez-García, Aurora de Castro Aguilar, Fernando Valladares, and Stephen W Pacala, 2021. **Future paths for the ‘exploitative segregation of plant roots’ model**. Plant Signaling & Behavior, DOI: 10.1080/15592324.2021.1891755

Ciro Cabal, Ricardo Martínez-García, Aurora de Castro Aguilar, Fernando Valladares, and Stephen W Pacala, 2020. **The exploitative segregation of plant roots**. Science, DOI: 10.1126/science.aba9877

Ciro Cabal and Daniel I. Rubenstein, 2018. **Above- and Below-Ground Biomass Allocation and Functional Trait Response to Soil Water Inputs and Drying Rates of two Common Savanna Grasses**. Journal of Arid Environments, DOI: 10.1016/j.jaridenv.2018.06.008

Ciro Cabal, Raúl Ochoa-Hueso, María Esther Pérez-Corona, and Esteban Manrique, 2017. **Long-term simulated nitrogen deposition alters the plant cover dynamics of a Mediterranean rosemary shrubland in central Spain through defoliation**. Environmental Science and Pollution Research, DOI: 10.1007/s11356-017-8879-7

Rut Sánchez de Dios, **Ciro Cabal**, Felipe Domínguez Lozano, Helios Sainz Ollero, and Juan Carlos Moreno Saiz, 2017. **The role of criteria in selecting important areas for conservation in biodiversity rich territories**. Diversity and Distributions, DOI: 10.1111/ddi.12535

Reviewer for

- Functional Ecology
- Oikos
- Plant and Soil
- AoB plants
- Plant Signaling and Behaviour