David García-Callejas

CONTACT INFORMATION	University of Cadiz Ecology Unit, Dpt. of Biology Campus de Puerto Real, 11510 Puerto Real (Cadiz, Spain) +34 620456021 david.garcia.callejas@gmail.com	ORCID: 0000-0001-6982-476X Google Scholar Publons GitHub Twitter Personal Website

RESEARCH INTERESTS

I am a community ecologist broadly interested in understanding the structure and dynamics of ecological assemblages, their spatiotemporal patterns, and their response to global change drivers. In particular, I study the role of biotic interactions in shaping local and regional patterns of diversity and coexistence. In approaching these themes, I aim to bridge theoretical approaches to fundamental questions with field experiments and observations.

CURRENT APPOINTMENTS

Postdoctoral researcher, University of Cadiz — February 2020 to present

PREVIOUS APPOINTMENTS

Postdoctoral researcher, EBD-CSIC — January 2019 to November 2019

Doctoral researcher, CREAF-UAB — September 2014 to November 2018

Research technician, Imperial College — January 2014 to August 2014

Research technician, University of Évora — March 2013 to January 2014

Research technician, CREAF — September 2012 to February 2013

EDUCATION

Ph.D. in Terrestrial Ecology, Autonomous University of Barcelona — 11/2018
- Thesis Title: *Structure and dynamics of ecological networks with multiple interaction types*
- Advisors: Dr. Miguel B. Araújo, Dr. Roberto Molowny-Horas
- Qualification: *Magna Cum Laude* with International Doctorate Distinction
- Associated stays: Integrative Ecology Lab, Univ. of Sherbrooke (Quebec), 09–12/2017, supervised by Prof. Dominique Gravel
- Thesis document and LaTeX template available at: https://github.com/garciacallejas/Thesis

M.Sc. in Terrestrial Ecology, Autonomous University of Barcelona — 09/2012
- Thesis Title: *Projecting the distribution and abundance of Mediterranean tree species under climate change: a demographic approach*
- Advisors: Prof. Javier Retana, Dr. Roberto Molowny-Horas
- 60 ECTS

B.S. in Environmental Sciences, University of Alcala — 07/2010
- 300 ECTS

B.S. in Computer Science, University of Granada — 09/2006
- 180 ECTS

REFEREED JOURNAL PUBLICATIONS

[1] Taheri, S., **García-Callejas, D.**, Araújo, M.B., 2020. Discriminating climate, land-cover and random effects on species range dynamics. *Global Change Biology*, in press.

[2] **García-Callejas, D.**, Godoy, O., Bartomeus, I. 2020. cxr: A toolbox for modelling species coexistence in R. *Methods in Ecology and Evolution*, 11:1221-1226.

doi:10.1111/2041-210X.13443
Associated R package: https://github.com/RadicalCommEcol/cxr

[3] **García-Callejas, D.**, De la Cruz Rot, M. 2020. Cómo crear paquetes de R. *Ecosistemas*, 29:1948.
doi:10.7818/ECOS.1948

[4] **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B., Gravel, D. 2019. Spatial cascades in communities connected by dispersal and foraging. *Ecology*, 100:e02820.
doi:10.1002/ecy.2820

[5] **García-Callejas, D.**, Torres, A. 2019. Restauración de interacciones ecológicas: medidas y consecuencias a escala de comunidad. *Ecosistemas*, 28:42-49.
doi:10.7818/ECOS.1748

[6] **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B. 2018. The effect of multiple biotic interaction types on species persistence. *Ecology*, 99:2327–2337.
doi:10.1002/ecy.2465

[7] **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B. 2018. Multiple interactions networks: towards more realistic descriptions of the web of life. *Oikos*, 127:5–22.
doi:10.1111/oik.04428 (Editor's choice)

[8] **García-Callejas, D.**, Molowny-Horas, R., Retana, J. 2017. Projecting the distribution and abundance of Mediterranean tree species under climate change: a demographic approach. *Journal of Plant Ecology*, 10:731–743.
doi:10.1093/jpe/rtw081 (Editor's choice)

[9] **García-Callejas, D.**, Araújo, M.B. 2016. The effects of model and data complexity on predictions from species distributions models. *Ecological Modelling*, 326:4–12.
doi:10.1016/j.ecolmodel.2015.06.002

PREPRINTS AND PAPERS IN PREPARATION

[10] Matias, M., Gravel, D., Chase, J.M., Cruz, C., **García-Callejas, D.**, Gilbert, T.P., Leibold, M., Pereira, C.L., Ramos, C., Raposeiro, P.M., Rozenfeld, A., Sroczynska, K., Vieites, D., Woodward, G., Araújo, M.B. PondNet – Towards a global network of experiments on the effects of climate change on aquatic ecosystems. *Manuscript under review.*

[11] Mestre, F., Gravel, D., **García-Callejas, D.**, Pinto-Cruz, C., Matías, M.G., Araújo, M.B. Disentangling environment food web relationships: a review with guidelines. *Manuscript under review.*

[12] **García-Callejas, D.**, Bartomeus, I., Godoy, O. Species-area relationships emerge from multiple coexistence mechanisms. *Manuscript under review.*

[13] **García-Callejas, D.** On the variability of Species Abundance Distributions with trophic guild and community structure. Preprint available: *biorXiv*, 289348
doi:10.1101/289348

CONFERENCE TALKS/POSTERS (AS FIRST AUTHOR)

[14] Talk: **García-Callejas, D.**, Bartomeus, I., Godoy, O. Species-area relationships emerge from multiple coexistence mechanisms. In: *BES 2020 Meeting*, 14-18/12/2020.

[15] Talk: **García-Callejas, D.**, Bartomeus, I., Hurtado, M., Godoy, O. Variability of an ecological multilayer network across space and interaction types. In: *NetSci conference*, 20-24/08/2020.

	[16] Talk: **García-Callejas, D.**, Godoy, O., Bartomeus, I. cxr: a toolbox for modelling species interactions and coexistence in R. In: *BES Quantitative Ecology Meeting*, 27-30/07/2020.
	[17] Talk: **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B., Gravel, D. Spatial cascades in networks connected by dispersal and foraging. In: *SIBECOL*, Barcelona, 04–07/02/2019.
	[18] Talk: **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B. Species persistence in networks with multiple interaction types. In: *NetSci conference*, Paris, 11–14/06/2018.
	[19] Talk: **García-Callejas, D.** The influence of trophic position on Species Abundance Distributions. In: *Ecology across borders*, Ghent, 11–14/12/2017.
	[20] Poster: **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B. Multiple interactions networks: towards more realistic descriptions of the web of life. In: *Community Ecology for the 21st Century*, Évora, 17–19/10/2016. (Best poster award)
INVITED TALKS	[21] **García-Callejas, D.**, Molowny-Horas, R., Araújo, M.B. Multiple interactions networks in community ecology: towards more realistic representations of the web of life. In: *Centre for Advanced Studies*, Blanes, 10/01/2019.
	[22] **García-Callejas, D.**, Molowny-Horas, R., Retana, J. Distribution and abundance of tree species: A spatially explicit model for Peninsular Spain. In: *Forest sciences centre of Catalonia*, Solsona, 10/12/2012.

TEACHING
EXPERIENCE

Centro de Estudios Andaluces   2020
- Introduction to R - 16h
- Reproducible analyses with R and RMarkdown - 12h

Universidad de Huelva   2020-2021
- Advanced Statistical Methods (M.Sc. in Biodiversity) - 5h (2020), 20h (2021)

Universitat Autònoma de Barcelona   2015-2018

Field/practical courses
- Ecology (B.S. in Environmental Sciences) - 62h
- Ecology (B.S. in Biology) - 15h
- Analysis and of environmental cartography (B.S. in Env. Biology) - 19h
- Analysis and cartography of vegetation (B.S. in Biology) - 23h

Theoretical courses
- Statistics and environmental modelling (M.Sc. in Terrestrial Ecology) - 2h
- Conservation Biology (B.S. in Env. Biology) - 12h
- Forest Ecology (B.S. in Env. Biology) - 1h

CREAF   2018

Seminar: Introduction to Latex and Zotero
- 5h in 2 sessions

Rui Nabeiro Biodiversity Chair   2013

Course: Introduction to the R Language
- 12h in 3 sessions

AWARDS
- FPU Visiting researcher scholarship, 2017. Science and Education Ministry, Spain.
- FPU Ph.D. scholarship programme, 2014–2018. Science and Education Ministry, Spain.
- M.Sc. scholarship programme, 2011–2012. "Fundación Obra Social La Caixa", Spain.
- International scholarship programme, 2010. "Fundación Bancaja", Spain.

LANGUAGES	• First Language: Spanish. • English: Proficient reading, speaking, writing. • Catalan: Proficient reading, basic speaking and writing. • Portuguese, Italian: Intermediate reading, basic speaking and writing.
SOFTWARE SKILLS	• Proficiency in R (statistical analyses, spatial and temporal analyses, data management and visualization, dynamic models, package development). • Knowledge of Unix shell, software parallelization in HPC. • Intermediate user of C++. • Git user, expertise in Latex (e.g. developed an open template for Ph.D. thesis, available at https://github.com/garciacallejas/Thesis). • Familiarity with QGIS and open source graphics software (GIMP, InkScape).
EVALUATION AND REFEREE SERVICE	• Evaluator for the United States' National Science Foundation Grants Program (2020). • Reviewer for scientific journals (since 2016): Global Ecology and Biogeography (2), Ecography (4), Journal of Ecology (3), Functional Ecology (1), Oikos (2), Ecology and Evolution (1), Journal of Animal Ecology (1), Journal of Environmental Informatics (1).
SELECTED MEDIA COVERAGE	• Biodiversity in Doñana (in Spanish): Interview in Youtube • News outlets on restoring species interactions (in Spanish): [1] [2] [3] [4] [5] [6]