

Curriculum Vitae

Mónica Ladrón de Guevara Sáez de Eguílaz

1. Education

- 2015 **Ph.D.** in Applied Environmental Sciences, University of Almería. Title: *Ecophysiological response of semiarid Mediterranean grassland to climate change*. Qualification: *Summa Cum Laude* by unanimity. Supervisors: Roberto Lázaro and Francisco Domingo, Experimental Station of Arid Zones (EEZA, CSIC).
- 2009 **International Master** of Geographic Information Systems, University of Girona. GPA: 8.7 out of 10.
- 2009 **Master's thesis**, University of Salamanca. Title: *Population trends and ecological biogeography of amphibians in the province of Álava*. Qualification: *Summa Cum Laude* by unanimity. Supervisors: Miguel Lizana and Carmelo Ávila, University of Salamanca.
- 2007 **Master** in Management and Conservation of Natural Resources, University of Salamanca. GPA: 3 out of 4.
- 2006 **University-Specific Degree** in Management and Conservation of Flora, Fauna and Protected Natural Areas, University of Salamanca.
- 2005 **Bachelor's Degree** in Environmental Sciences, University of Basque Country.

2. Employment and Research Experience

- 2018- Postdoctoral fellow. Arizona State University (ASU), Arizona, USA; and Center for Ecological Research and Forestry Applications (CREAF), Barcelona, Spain.
- 2016-2018 Postdoctoral researcher. University of Rey Juan Carlos. Madrid, Spain.
- 2010 Visiting predoctoral fellow. University of Rey Juan Carlos. Madrid, Spain.
- 2008-2015 Predoctoral fellow. Experimental Station of Arid Zones (EEZA, CSIC). Almería, Spain.
- 2007 Instructor of environmental education. Company: SDL, Investigación y Divulgación del Medio Ambiente, S.L. Salamanca, Spain.
- 2006-2008 Graduate researcher. University of Salamanca, Spain.

3. Grants

- 2018-2021 Post-doctoral Marie Skłodowska-Curie Individual Fellowship (ERC).
- 2008-2012 Pre-doctoral fellowship JAE (CSIC).
- 2005-2006 Fellowship for postgraduate technological expertise on biodiversity (Basque Government).

4. Participation in research projects

- 2014-2017 BIOMOD: El papel de los organismos como moduladores de la respuesta de los ecosistemas áridos al cambio global: un análisis pluriescalar / The role of organisms as response modulators of arid ecosystems to global change: a pluriescalar analysis. Spanish Ministry of Economy, €164,000; PI: Dr Fernando T. Maestre. Responsibilities: managing micrometeorological and ecophysiological databases; manufacturing a transparent chamber to measure photosynthesis on biological soil crusts (BSCs); performing gas-exchange measurements on BSCs in a climate-change experiment; performing statistical analysis; and writing scientific articles
- 2012-2014 BACARDOS: Balance de carbono en costras biológicas de ecosistemas semiáridos / Carbon balance in biological crusts of semi-arid ecosystems. Spanish Ministry of Economy, €55,000; PI: Dr Yolanda Cantón. Responsibilities: statistical analysis and writing scientific articles.
- 2010-2014 BIOCOCOM: Biotic community attributes and ecosystem functioning: implications for predicting and mitigating global change impacts. European Research Council, €1,894,450; PI: Dr Fernando Maestre. Responsibilities: extracting DNA from soil samples; maintaining a climate-change experiment over BSC covers; measuring gas exchange in the experimental plots; analysing changes in the BSC coverage using photographic processing; managing micrometeorological and ecophysiological databases; conducting statistical analyses; and writing scientific articles.
- 2007-2010 PREVEA: Consecuencias de cambios experimentales en el patrón de las precipitaciones sobre la vegetación en el mediterráneo semiárido, incluyendo el modelado espacialmente distribuido del agua disponible / Consequences of experimental changes in rainfall patterns over semiarid Mediterranean vegetation, including the spatially distributed modelling of available water. Spanish Ministry of Education and Science, €157,300; PI: Dr

Roberto Lázaro. -Consequences of experimental changes in rainfall patterns over semiarid Mediterranean vegetation, including the spatially distributed modelling of available water. Responsibilities: designing, installing and maintaining field experiments; maintaining and collecting data from automatic microclimate monitoring systems; performing ecophysiological measurements on plants and BSCs (gas exchange, fluorescence, LAI, phenology and leaf growth); collecting plant and soil samples; maintaining field instruments (Li-Cor 6400, Li-Cor 8100, EGM-4 PP-System, Hansatech fluorescence equipment, Tetracam NIR camera); designing and calibrating chambers for performing photosynthesis measurements on BSCs; managing micrometeorological and ecophysiological databases; conducting statistical analyses; and writing scientific articles.

5. Publications in SCI journals

- **M. Ladrón de Guevara**, R. Lázaro, E. Arnau-Rosalén, F. Domingo, I. Molina-Sanchis, J. L. Mora (2015). Climate change effects in a semiarid grassland: Physiological responses to shifts in rain patterns. *Acta Oecologica* 69, 9-20. IF = 1.42.
- **M. Ladrón de Guevara**, R. Lázaro, J. L. Quero, S. Chamizo, F. Domingo (2015). Easy-to-make portable chamber for in situ CO₂ exchange measurements on biological soil crusts. *Photosynthetica* 53, 72-84. IF = 1.56.
- **M. Ladrón de Guevara**, R. Lázaro, J. L. Quero, V. Ochoa, B. Gozalo, M. Berdugo, O. Uclés, C. Escolar, F. T. Maestre (2014). Simulated climate change reduced the capacity of lichen-dominated biocrusts to act as carbon sinks in two semi-arid Mediterranean ecosystems. *Biodiversity and Conservation* 23, 1787-1807. IF = 2.26.
- F. T. Maestre, C. Escolar, **M. Ladrón de Guevara**, J. L. Quero, R. Lázaro, M. Delgado-Baquerizo, V. Ochoa, M. Berdugo, B. Gozalo, A. Gallardo (2013). Changes in biocrust cover drive carbon cycle responses to climate change in drylands. *Global Change Biology* 20, 3835-3847. IF = 8.44.

6. Other publications

- E. Arnau-Rosalén, Y. Cantón, S. Chamizo, F. Domingo, **M. Ladrón de Guevara**, R. Lázaro, I. Molina-Sanchis, L. Morillas González, A. Solé-Benet, E. Rodríguez-Caballero; O. Uclés (2011). Balsa Blanca: experimental site field guide. Technical report, 46 pp.
- **M. Ladrón de Guevara**, M. Lizana, C. Ávila-Zarza, A. Bea-Sánchez (2010). Análisis de los patrones de distribución de los anfibios en Álava y Condado de Treviño / Analysis of the distribution patterns of amphibians in Alava and Condado de Treviño. *Revista Española de Herpetología* 24, 41-59.
- L. Morillas, M. García, P. Zarco-Tejada, **M. Ladrón de Guevara**, L. Villagarcía, A. Were, F. Domingo (2009). Derivation of the canopy conductance from surface temperature and spectral indices for estimating evapotranspiration in semiarid vegetation. In: A. Romero, F. Belmonte, F. Alonso-Sarria, F. López-Bermúdez. *Advances in studies on desertification. Topic 4*, 583-586. Edited by the University of Murcia.

7. Congresses and meetings (Oral contributions (O); Posters (P))

- **M. Ladrón de Guevara**, B. Gozalo, J. Raggio, A. Lafuente, M. Prieto, F. Maestre (2017). Experimental warming reduces the cover, richness and evenness of lichen-dominated biocrusts in a hot semiarid ecosystem: Insights from an eight-year experiment. XXI Cryptogamic Botany Symposium. Spain (O).
- E. Arnau-Rosalén, I. Molina-Sanchis, **M. Ladrón de Guevara**, R. Lázaro, A. Calvo-Cases, C. Boix-Fayos (2016). Patterns of surface runoff at hillslope scale: insights into source-sink bihydrologic relationships. 4th International Conference on Biohydrology. Spain (P).
- Y. Cantón, S. Chamizo, I. Miralles, E. Rodríguez-Caballero, R. Ortega, **M. Ladrón de Guevara**, R. Lázaro (2015). Biocrusts influence on C-assimilation and C-losses by respiration and erosion in dryland soils. ISCO 18 Conference. US (O).
- Y. Cantón, S. Chamizo, E. Rodríguez-Caballero, I. Miralles, **M. Ladrón de Guevara** (2014). Biological soil crusts: source or sinks of CO₂ in semiarid ecosystems? Biogeochemical Processes at Air-Soil-Water Interfaces and Environmental Protection. Italy (P).
- S. Chamizo, I. Miralles, E. Rodríguez-Caballero, R. Ortega, **M. Ladrón de Guevara**, L. Luna, Y. Cantón (2014). Biological soil crusts as key drivers for CO₂ fluxes in semiarid ecosystems. EGU General Assembly 2014 (P).
- C. Escolar, F. T. Maestre, **M. Ladrón de Guevara**, J. L. Quero, R. Lázaro, M. Delgado-Baquerizo, V. Ochoa, M. Berdugo, B. Gozalo, A. Gallardo (2013). Changes in cryptogamic cover drive carbon cycle responses to climate change in drylands. 2nd International Workshop on Biological Soil Crust: biological soil crusts in a changing world. Spain (O).

- **M. Ladrón de Guevara**, J. L. Quero, R. Lázaro, S. Chamizo, F. Domingo (2013). Custom chambers for *in situ* gas exchange measurements (CO₂ and H₂O) on biological soil crusts. 2nd International Workshop on Biological Soil Crust: biological soil crusts in a changing world. Spain (P).
- I. Miralles, R. Ortega, S. Chamizo, **M. Ladrón de Guevara**, R. Lázaro, F. Domingo, C. Oyonarte, Y. Cantón (2013). *In situ* monitoring of daily and seasonal CO₂ fluxes on biological soil crusts and microclimate. 2nd International Workshop on Biological Soil Crust: biological soil crusts in a changing world. Spain (P).
- **M. Ladrón de Guevara**, J. L. Quero, R. Lázaro, V. Ochoa, B. Gozalo, M. Berdugo, C. Escolar, F. T. Maestre (2013). Impacto del cambio climático en los flujos de C de la Costra Biológica del Suelo / Impact of climate change on biological soil crust C fluxes. XI Congreso Nacional de la Asociación Española de Ecología Terrestre. Invitación a la ecología: estrechando lazos con la sociedad (O).
- F. Maestre, C. Escolar, J. L. Quero, **M. Ladrón de Guevara**, R. Lázaro, V. Ochoa, B. Gozalo, M. Berdugo (2012). Will climate change reduce the ability of biological soil crusts to act as a carbon sink in drylands? EGU General Assembly 2012 (O).
- R. Lázaro, **M. Ladrón de Guevara**, J. L. Quero, V. Ochoa, C. Escolar, I. Molina-Sanchis, E. Arnau-Rosalén, J. L. Mora, F. T. Maestre (2011). Does Climatic Change affect Biological Soil Crust functions? 12th EEF Congress (P).
- **M. Ladrón de Guevara**, R. Lázaro, E. Arnau-Rosalén, F. Domingo, I. Molina-Sanchis, J. L. Mora (2011). Changes in *Macrochloa tenacissima* activity after undergoing an altered rainfall regime in natural environment (SE Spain). 12th EEF Congress (P).
- I. Molina-Sanchis, R. Lázaro, L. Cayuela, E. Arnau-Rosalén, A. Calvo-Cases, **M. Ladrón de Guevara** (2011). Effect of the definition of 'rainfall event' on runoff analysis. 12th EEF Congress (P).
- L. Villagarcía, **M. Ladrón de Guevara**, L. Morillas, S. Chamizo, A. Were, P. Serrano-Ortiz, F. Domingo, R. Lázaro (2011). Effect of the change in precipitation patterns on evapotranspiration of a semiarid ecosystem from SE Spain. 12th EEF Congress (P).
- E. Arnau-Rosalén, I. Molina-Sanchis, R. Lázaro, **M. Ladrón de Guevara**, C. Boix-Fayos, A. Calvo-Cases (2011). Runoff-driven soil water redistribution on the basis of eco-hydrological relationships. 12th EEF Congress (P).
- E. Arnau-Rosalén, I. Molina-Sanchis, R. Lázaro, A. Calvo-Cases, **M. Ladrón de Guevara**, C. Boix-Fayos (2010). Efecto de la distribución espacial de la vegetación en la escorrentía mediante un nuevo diseño de parcelas / Effect of vegetation spatial distribution on runoff using a new plot design. XI Reunión Nacional de Geomorfología (P).
- **M. Ladrón de Guevara**, R. Lázaro, E. Arnau-Rosalén, F. Domingo (2009). Diseño y primeros resultados de un experimento de exclusión de lluvias en un ecosistema semiárido mediterráneo / Design and first results of a rainfall exclusion experiment in a Mediterranean semiarid ecosystem. IX Congreso Nacional de la Asociación Española de Ecología Terrestre: la dimensión ecológica del desarrollo sostenible: ecología, del conocimiento a la aplicación (P).

8. Miscellaneous

Journal reviewer:

Annals of Botany (IF = 3.98).

Journal of Arid environments (IF = 2.15).

Nature Geoscience (IF = 12.51).

Functional Ecology (IF = 6.64).

Outreach activities:

- First Edition of science à la carte (2017). Organised activity: Anticipating climate change at the URJC. University of Rey Juan Carlos. Madrid, Spain.
- Fascination of Plants Day (2017). Organised activity: The fascinating world of lichens, when more than two is not crowded. Environmental Studies Center (CEA) and Nature Institute of Álava (IAN-ANI). Vitoria, Spain.