

Curriculum Vitae of Roger Grau-Andrés

Research experience

- 01/03/2022-current Post-doctoral researcher at the Research Centre on Desertification (CIDE). PI: Dr Juli G Pausas. Meta-analysis of vegetation responses to changes in fire regimes.
- 01/06/2020-28/02/2022 Post-doctoral researcher at the Swedish University of Agricultural Sciences (SLU), Umeå, Sweden. PI: Prof Michael Gundale. Charcoal effects on vegetation and N₂O, CH₄, and CO₂ fluxes in boreal forests. Plant trait coordination in bryophytes.
- 01/06/2018-31/05/2020 Post-doctoral researcher at SLU. PI: Dr Paul Kardol. Effects of loss of plant functional groups and of precipitation regimes on CO₂, decomposition and soil C stocks in a boreal forest chronosequence. Drought effects on bryosphere functioning and fauna.
- 01/05/2017-31/12/2017 Post-doctoral researcher at The Ohio State University, Ohio, US. PI: Dr G Matt Davies. Bryophytes as indicators for wetland restoration potential.
- 01/06/2010-31/08/2010 Research assistant at NIOO-KNAW (Netherlands Research Institute of Ecology). PI: Dr. Tibor Bukovidzky. Effects of elemental stoichiometry of food on feeding behaviour of aquatic microarthropods.
- 01/06/2009-31/08/2009 Research assistant at the Faculty of Physics (University of Valencia). PI: Prof Ernesto López Baeza. Data validation for estimating soil moisture content with remote sensing.
- 16/05/2008-31/12/2008 Research assistant at CIDE (Research Centre on Desertification). PI: Dr. Eugenia Gimeno García. Fire effects on vegetation and soil moisture content.

Education

- 01/09/2012-31/08/2016 PhD (University of Glasgow, Scotland). PI: Dr G Matt Davies. Drought and fuel controls on fire severity. Effects on post-fire vegetation, groundwater dissolved organic carbon, and ecosystem CO₂ and CH₄ exchange. <https://theses.gla.ac.uk/7929/>
- 01/09/2009-15/09/2011 MSc Environmental Engineering (The University of Valencia and The Polytechnic University of Valencia, Spain).
- 15/09/2002-30/09/2008 BSc Environmental Sciences (The University of Valencia, Spain).

Publications

- **Grau-Andrés, R.**; Thieffry, S.; Tian, S.; Wardle, D. A. & Kardol, P. Responses of bryosphere fauna to drought across a boreal forest chronosequence. *Oecologia*, 2022. DOI: 10.1007/s00442-022-05255-z
- **Grau-Andrés, R.**; Kardol, P. & Gundale, M.J. Trait coordination in boreal mosses reveals a bryophyte economics spectrum. *Journal of Ecology*, 2022. DOI: 10.1111/1365-2745.13965
- **Grau-Andrés, R.**; Wardle, D.A.; & Kardol, P. Bryosphere loss impairs litter decomposition consistently across moss species, litter types, and micro-arthropod abundance. *Ecosystems*, 2021. DOI: 10.1007/s10021-021-00731-8
- **Grau-Andrés, R.**; Pingree, M.R.; Öquist, M.G.; Wardle, D.A.; Nilsson, M.C. & Gundale, M.J. Biochar increases tree biomass in a managed boreal forest, but does not alter N₂O, CH₄, and CO₂ emissions. *GCB Bioenergy*, 2021, 13(8): 1329-1342. DOI: 10.1111/gcbb.12864
- **Grau-Andrés, R.**; Wardle D.A.; Nilsson M.C. & Kardol, P. Precipitation regime controls bryosphere carbon cycling similarly across contrasting ecosystems. *Oikos*, 2021, 130(4):512-24. DOI: 10.1111/oik.07749
- **Grau-Andrés, R.**; Wardle, D.A.; Gundale, M.J.; Foster, C.N. & Kardol, P. Effects of plant functional group removal on CO₂ fluxes and belowground C stocks across contrasting ecosystems. *Ecology*, 2020, 101(12), p.e03170. DOI: 10.1002/ecy.3170
- **Grau-Andrés, R.**; Davies, G.M.; Rey-Sanchez, C. & Slater, J. Bryophyte community composition and diversity are indicators of hydrochemical and ecological gradients in temperate kettle hole mires in Ohio, USA. *Mires and Peat*, 2019, 24, 37. DOI: doi.org/10.19189/MaP.2019.APG.StA.1783
- Rey-Sanchez, C.; Bohrer, G.; Slater, J.; Li, Y.; **Grau-Andrés, R.**; Hao, Y.; Rich, V.; and Davies, G.M. The ratio of methanogens to methanotrophs and water-level dynamics drive methane transfer velocity in a temperate kettle-hole peat bog. *Biogeosciences*, 2019, 16, 3207-3231. DOI: 10.5194/bg-16-3207-2019
- **Grau-Andrés, R.**; Gray, A.; Davies, G. M.; Scott, E. M. & Waldron, S. Burning increases post-fire carbon emissions in a heathland and a raised bog, but experimental manipulation of fire severity has no effect. *Journal of Environmental Management*, 2019, 233, 321-328. DOI: doi.org/10.1016/j.jenvman.2018.12.036
- **Grau-Andrés, R.**; Davies, G. M.; Waldron, S.; Scott, E. M. & Gray, A. Increased fire severity alters initial vegetation regeneration across *Calluna*-dominated ecosystems. *Journal of Environmental Management*, 2019, 231, 1004-1011. DOI: doi.org/10.1016/j.jenvman.2018.10.113
- **Grau-Andrés, R.**; Davies, G. M.; Gray, A.; Scott, E. M. & Waldron, S. Fire severity is more sensitive to low fuel moisture content on *Calluna* heathlands than on peat bogs. *Science of the Total Environment*, 2018, 616-617, 1261-1269. DOI: doi.org/10.1016/j.scitotenv.2017.10.192
- **Grau-Andrés, R.**; Gray, A. & Davies, G. M. *Sphagnum* abundance and photosynthetic capacity show rapid short-term recovery following managed burning. *Plant Ecology & Diversity*, 2017, 10 353-359. DOI: doi.org/10.1080/17550874.2017.1394394
- **Grau-Andrés, R.**; Davies, G. M.; Waldron, S.; Scott, E. M. & Gray, A. Leaving moss and litter layers undisturbed reduces the short-term environmental consequences of heathland managed burns. *Journal of Environmental Management*, 2017, 204, 102-110. DOI: doi.org/10.1016/j.jenvman.2017.08.017
- Bukovinszky, T.; Helmsing, N.R.; **Grau-Andrés, R.**; Bakker, E.S.; Bezemer, T.M.; Vos, M.; Uittenhout, H.; and Verschoor, A.M. A device to study the behavioral responses of zooplankton to food quality and quantity. *Journal of insect behavior*, 2013, 26453-465. DOI: 10.1007/s10905-012-9366-0

Oral presentations

- 12/2019 British Ecological Society Annual Meeting (Belfast, Northern Ireland, UK); “Effects of plant functional group removal on understory CO₂ flux and soil C stocks across a boreal forest productivity gradient”.
- 02/2017 International Congress on Prescribed Fires (Barcelona, Spain); “Drought increases fire severity and alters vegetation regeneration in *Calluna* heathlands and peat bogs”.
- 11/2015 Wildfire conference (Glasgow, Scotland, UK); “Moisture codes of the Canadian Forest Fire Weather Index System could be used to forecast the flammability of key moorland fuels”.
- 07/2015 Fire Effects on Soil Properties Conference (Dublin, Republic of Ireland); “Fuel and Climate controls on Peatland Fire Severity”.
- 05/2015 FUERGORED (International Research Network on Fire Effects on Forest Ecosystems) Congress (Málaga, Spain); “Climate controls on fire severity and post-fire vegetation regeneration”.

Teaching and supervision

- 2019-2020 Lab demonstrator and project supervisor in the Forest Vegetation Ecology course (Swedish University of Agricultural Sciences). Guest lecturer on the role of mosses and understory vegetation on carbon cycling in boreal forests. Course leaders were Prof Michael Gundale and Dr Paul Kardol.
- 2019 MSc thesis supervision: “Effect of precipitation regime in moss food web in boreal forests”, by Sylvia Thieffry, completed at the Swedish University of Agricultural Sciences. PI was Dr Paul Kardol.
- 2016 Course leader for the course “Data handling, statistics and use of R” from IAPETUS-SCENE (a doctoral training program from several UK institutions including the University of Glasgow).
- 2015-2016 Tutor in workshops of the Geology program (University of Glasgow), coordinated by Dr. Emma Laurie. Teaching assistant in Statistics modules of the Geology program.
- 2014 Teaching assistant in the Ecosystem Restoration course of the Environmental Stewardship program (University of Glasgow), led by Dr. G. Matt Davies.