

Part A. Personal Information

DATE	September 2023
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Surname(s)	Vilà	
Forename	Montserrat	
ID number	40462147H	
Sex	woman	
Age	57	
Researcher numbers	Researcher ID	D-9339-2013
	Open Researcher and Contributor ID (ORCID)	0000-0003-3171-8261

A.1. Current position

Professional Category	Research professor OPIS since 2010	
UNESCO Code	2417-13 Ecología Vegetal	
Key Words	Alien plants, biodiversity, biogeography, biological invasions, global change, Mediterranean ecosystems, plant communities	
Name of the University/Institution	Estación Biológica de Doñana (EBD-CSIC)	
	Full Address	C/Américo Vespucio 26, Isla de la Cartuja, 41092 Sevilla
	Email address	montse.vila@ebd.csic.es
	Phone number	690934093

A.2. Education

1988	Universitat Autònoma de Barcelona (UAB)	B.S. Biology	
1993	UAB	PhD. Sciences (Biology)	Title: Effect of competition in resprouting, growth and flowering of <i>Erica multiflora</i> L. after disturbances
1994-1996	University of California, Berkeley	Postdoctorate	Title: Invasion ecology of <i>Carpobrotus</i> hybrids

A.3. Indicators of Quality in Scientific Production

- Among the top 1% researchers for most cited documents in the Ecology/Environment field for the last 9 years (2014-2022) according to Clarivate Analytics
- ISI publications: >220 (>90% Q1 Ecology/Plant Sciences/Environmental Sciences); books edited: 7; book chapters: 40; outreach publications: > 40
- SCOPUS: 27669 citations (h = 74), Google Scholar: 45869 citations (h = 94)
- "Sexenios de investigación": 5; "Sexenios de transferencia de conocimiento": 1
- 2020 Distinction in Ecology Luís Balaguer and Honorary member of the Spanish Association of Terrestrial Ecology (AEET)
- 2020 North-South Prize from the Council of Europe to the Mediterranean Experts on Climate and Environmental Change (MedECC) network
- 2021 Mercer Award of the Ecological Society of America
- 2021 Member of the Sevilla Royal Academy of Sciences
- 2021 National Research Award Alejandro Malaspina in the area of Sciences and Technologies of Natural Resources
- 2022 The Gulbenkian Prize for Humanity to IPBES extends the Prize to all contributing members
- 2023 Member of the Spanish Royal Academy of Sciences

Part B. Free Summary of CV

We investigate the ecology of biological invasions by non-native organisms in the following research areas:

(1) Description of macroecological patterns of invasions. We have identified which are the most invaded habitats at the national scale, landscape scale, for Europe and across the Mediterranean Biome. The most invaded habitats are anthropogenic landscapes such as urban and agricultural lands, coastal habitats or riparian forests. This pattern is similar across

all Mediterranean regions of the World. In Europe, the most invaded countries are the economically most developed with temperate climatic conditions. We have described time lags in invasion, such that past human activities explain better contemporaneous invasions than current human activities. Therefore, our results indicate that there is a need to dig up on the history to understand which non-native species invade today and which ones will in the future.

(2) Effect of global change on invasions. We have investigated both the effects of climate change and land-use changes on invasions. For instance, we have modelled the present and future distribution of 100 of the most invasive species in terrestrial, freshwater and marine European habitats. Protected areas are free from the most important species that invade the continent. Nevertheless, future climatic change projections indicate that these non-native species will expand at fast speed to the North and East of Europe.

(3) Analysis of the ecological and socio-economic impacts of invasions. Our leading global synthesis on the impacts of biological invasions has demonstrated that there are general trends towards invasive plant species reducing the fitness and diversity of the native flora and fauna, altering energy flow and changing nutrient cycling. Usually, once society is aware of the economic consequences of invasions, it is already too late to mitigate their environmental impacts.

Part C. Accomplishments

C.1. Ten recent selected publications

- López BE (CA), JA Allen, JS Dukes...BA Bradley (5/15) 2022. Global environmental changes more frequently offset than intensify detrimental effects of biological invasions. *PNAS*, 119(22), e2117389119.
- Vilà M (CA), AM Dunn, F Essl...B Gallardo (1/11) 2021. Viewing emerging human infectious epidemics through the lens of invasion biology. *BioScience* 71: 722-740.
- Vilà M (CA), EM Beaury, DM Blumenthal...I Ibáñez (1/10) 2021. Understanding the combined impacts of weeds and climate change on crops. *Environmental Research Letters*, 16(3), 034043.
- Bradley BA (CA), BB Laginhas, R Whitlock...CJ Sorte (10/11) 2019. Disentangling the abundance-impact relationship for invasive species. *PNAS* 116: 9919-9924. *Mercer Award 2021 de la Ecological Society of America*.
- Vilà M (CA), B Gallardo, C Preda...P González-Moreno (1/8) 2019. A review of impact assessment protocols of non-native plants. *Biological Invasions* 21: 709-723.
- Vilà M (CA) & Hulme PH (eds.) 2017. *Impact of biological invasions on ecosystem services*. Springer, Heidelberg. ISBN 978-3-319-45121-3
- Magrach A (CA), JP González-Varo, M Boiffier, M. Vilà & I Bartomeus. 2017. Honeybee spillover reshuffles pollinator diets and affects plant reproductive success. *Nature Ecology and Evolution* 1: 1299-1307.
- Gallardo B, DC Aldridge, P González-Moreno...M Vilà (9/9) 2017. Protected areas offer refuge from invasive species spreading under climate change. *Global Change Biology* 23: 5331-5343.
- Gallardo B (CA), M Clavero, MI Sánchez & M Vilà. 2016. Global ecological impacts of invasive species in aquatic ecosystems. *Global Change Biology* 22: 151-163.
- Vilà M (CA), RP Rohr, JL Espinar...P Pysek (1/8) 2015. Explaining the variation in impacts of non-native plants on local-scale species richness: the role of phylogenetic relatedness. *Global Ecology and Biogeography* 24: 139-146.

C.2. Invited international conferences

- 2014. 4th International Symposium of Environmental Weeds and Invasive Plants, Montpellier, France.
- 2015. Horizon-Scanning of Invasive Species Workshop EU DG Environment, Brussels, Belgium.
- 2016. State of the World's Plants Symposium, Royal Botanic Gardens, Kew, UK.
- 2016. Check Academy of Sciences, Pruhonice, Check Republic.
- 2017. Annual Conference Cycle. Cervantes Institute, Sydney, Australia.
- 2017. Faculty of Sciences, University of Sydney, Australia.
- 2017. School of Biological Sciences, Queensland University, Brisbane, Australia.

- 2017. Netherlands Institute of Ecology (NIOO-KNAW), Wageningen, Netherlands.
- 2018. Regional Invasive Species and Climate Change (RISCC) Annual Symposium, University of Massachusetts, Amherst, USA.
- 2018. First Iberian Meeting on Agroecology Research, Évora, Portugal.
- 2019. First Iberian Society of Ecology Meeting (SIBECOL), Barcelona, Spain
- 2020. Women in Ecology (online).
- 2020. Invasion Biogeography: Using Big Data to Assess Invasion and Impact at Macroscales Symposia. Ecological Society of America Meeting (online).
- 2020. Department of Landscape Architecture, Harvard University Graduate School of Design, USA (online).
- 2021. Lifewatch ERIC e-science for Non-indigenous Species research workshop (online).
- 2022. Fixing the Future Festival. Barcelona, Spain.
- 2022. Botanical Institute of the Armenian Academy of Sciences, Yerevan, Armenia.

C.3. Participation in Research, Development and Innovation Projects

Besides PI of uninterrupted funding from the Spanish National Research Plan, major funding comes from **competitive EU projects**:

- Status and Trends of European Pollinators (STEP), EU 244090. PI: S. Potts. Task leader for relevant pressures on European pollinators: PI in Spain: **M. Vilà** (2010-2014).
- Pollinator responses to global change and its implications for ecosystem functioning (BeeFun), PCIG14-GA-2013-631653, PI: **M. Vilà** (2014-2016).
- Managing stability of biodiversity-based ecosystem services in crops through enhanced density of green infrastructure in agricultural landscapes (ECODEAL), ERANET-BIODIVERSA PCIN-2014-084. PI: Y Clout, PI in Spain: **M. Vilà** (2015-2017).
- Understanding and managing the impacts of Invasive alien species on Biodiversity and Ecosystem Services (InvasiBES). ERANET-BIODIVERSA PCI2018-092939. PI: **M. Vilà** (2019-2022).
- The other side of invasibility: vulnerability of recipient ecosystems. National Center for Ecological Synthesis (NCEAS) and National Science Foundation of the US. PI: B. Bradley & I. Ibáñez (2019-2021).
- Beyond *Xylella*, integrated strategies for mitigating *Xylella fastidiosa* impact in Europe (BeXyl). Call HORIZON-CL6-2021. PI: Blanca Landa (2022-2026).
- Developing a macroecological understanding of invasive plant impacts based on abundance and trait data. Powel Center for Analysis and Synthesis in USA. PI: Helen Sofaer (2022-2024).

C.4. Contracts

- Biological invasions and climate change in Europe: risk analysis and opportunities. Contract with Fundación Iberdrola PI: **M. Vilà** (2014-2015).
- EU Invasive Alien Species - Prioritising prevention efforts through horizon scanning. ENV.B.2/ETU/2014/0016. Coordinator: H. Roy, Subcontracted expert: **M. Vilà** (2014-2015).
- European Alien Species Information Network (EASIN) – update and alignment to a recent reclassification of pathways by the CBD. ENV.B.2/SER/2015/0037rl. Coordinator: H. Roy. Subcontracted expert: **M. Vilà** (2015-2016).
- Ecological implications of commercial bumblebee spillover in natural áreas (ABEJORROS). BBVA Foundation PI: **M. Vilà** (2019-2021).

C.5. Institutional service

- 2012-2015. Deputy Director, Estación Biológica de Doñana (EBD-CSIC).
- 2017-2018. Coordinator of proposal evaluations in Plant Biology, Animal Biology and Ecology area at the Spanish National Research Agency.
- 2017-2022. Member of the Scientific Committee on Flora and Fauna for the Spanish Ministry for Ecological Transition.

- 2020-present. Coordinator of the theme on environmental impacts for the CSIC PTI-Global Health Platform.
- 2020-present. Member of the Scientific Advisory Committee for CSIC.

C.6. International service

- 2011-present. IUCN SSC Invasive Species Specialist Group Member.
- 2012. Member of the Discussion Forum on alien species in wildlife trade, experiences in the use of biological control agents and development of decision support tools for management of invasive alien species". Convention of Biological Diversity (CBD) Secretariat.
- 2013. Chair of the Evaluation Committee BiodivERsA call on "Invasive Species and Biological Invasions".
- 2014- present. President of the European Working Group on Biological Invasions (NEOBIOTA).
- 2014. Reviewer for GBO-4 technical background document on Aichi Biodiversity Target 9: Invasive alien species, UNEP.
- 2015-present. Member of the Scientific Forum of the European Regulation on Alien Invasive Species.
- 2017, 2019, 2021, 2023. Panel member for LS8 ERC Consolidator Grants.
- 2017- 2020. Jury member for the Ramon Margalef prize in Ecology.
- 2019-present lead author for the IPBES Assessment on Biological invasions.

C.7. Editorial service

Associate editor for BioScience (2019-present), Ecology Letters (2012-present), NEOBIOTA (2010-present), Biological Invasions (2009-present).

C.8. Organization of international meetings and conferences

- 2013. Adapting to Global Change in the Mediterranean hotspot: from genes to ecosystems (EcoGenes) Organizing and Scientific Committee. Sevilla.
- 2014. XIII MEDECOS International Conference Scientific Committee. Olmué, Chile.
- 2015. Developing a priority list of invasive alien species in Europe Workshop organizer. Sevilla.
- 2017. XIV MEDECOS & XIII AEET Meeting Co-chair. Sevilla.
- European Conference on Biological Invasions (NEOBIOTA) Scientific Committee: 2010 Copenhagen (Denmark), 2012 Pontevedra (Spain), 2014 Antalya (Turkey), 2016 Vianden (Luxembourg), 2018 Dublin (Ireland), 2020 Vodice (Croatia), 2022 Tartu (Estonia).

C.9. Proposal/position evaluation and committees

Deutsche Forschungsgemeinschaft, Swiss National Research Foundation, Research and Innovation SERI in Switzerland, Fundación Banco Bilbao Vizcaya, South Africa's National Research Foundation, Research Foundation Flanders, Ministerio de Educación de Chile, Sino-German Center for Research Promotion, Finland Academy of Sciences, University of Copenhagen, Programa Serra Hunter de la Generalitat de Catalunya.

C.10. Teaching, student advisor and mentorship

- 2019-present. Associate professor at the Department of Plant Biology and Ecology, University of Seville.
- 1992-2006. Professor of ecology to undergraduate and graduate students (240 h/yr) at Universitat Autònoma de Barcelona (UAB).
- **PhD thesis supervisor:** Isabel Gimeno (2005), Roser Doménech (2005), Ignasi Bartomeus (2008), Núria Gassó (2008), Amparo Carrillo (2011), Jara Andreu (2012), Ana Montero (2014), Pablo González-Moreno (2015), Alejandro Trillo (2019), Carlos Zaragoza (2021), Álvaro Bayón (2021), Javier Galán (2021).
- Regular host for international undergraduate and graduate students (Erasmus +, Leonardo, COST programs, Fundación Carolina, etc.).