

Parte A. DATOS PERSONALES		Fecha del CVA		19/09/2019
Nombre y apellidos	Robert John Wilson			
NIE	X4929722V	Edad	47	
Núm. identificación del investigador	Researcher ID	I-8726-2014		
	Código Orcid	0000-0003-4477-7068		

A.1. Situación profesional actual

Organismo	MUSEO NACIONAL DE CIENCIAS NATURALES (MNCN-CSIC)			
Dpto./Centro	DEPARTAMENTO DE BIOGEOGRAFÍA Y CAMBIO GLOBAL			
Dirección	CALLE JOSÉ GUTIÉRREZ ABASCAL, 2; 28006 MADRID			
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Categoría profesional	CIENTÍFICO TITULAR	Fecha inicio	01/08/2018	
Espec. cód. UNESCO	2401.06 – Ecología Animal 2413.03 – Ecología de Los Insectos 2502.04 – Microclimatología 2505.01 – Biogeografía 3105.12 - Ordenación y Conservación de la Fauna Silvestre			
Palabras clave	Climate change, conservation biology, elevation range shifts, Lepidoptera, metapopulations, microclimate, species distributions			

A.2. Formación académica (*título, institución, fecha*)

Licenciatura/Grado/Doctorado	Universidad	Año
BA Hons - First Class, Biological Sciences	University of Oxford (Reino Unido)	1994
PhD, Ecology	University of Leeds (Reino Unido)	2000
PGCert, Academic Practice	University of Exeter (Reino Unido)	2010

A.3. Indicadores generales de calidad de la producción científica

- **24 years of scientific research in ecology, conservation biology, and global environmental change**
- **16 years as an independent researcher / principal investigator**
- **In the past 5 years I have been PI for 5 competitively funded projects with a total funding of >400,000 € (since 2009, 11 projects, total >1.1 M €)**
- **In the past five years I have supervised 4 postdoctoral researchers, 7 postgraduate research students (2 completed), and 5 research assistants / technicians**
- **I have more than 4800 total citations, from 64 articles listed by the Science Citation Index**
- **I have an average of 443 citations per year during the past 5 years (2014-2018)**
- **52 publications in total in the first quartile (Q1)**
- **30 publications in total in the first decile (D1)**
- **h-index 29; i10 index 48**
- **My 4 completed PhD students since 2009 have published a total of 12 first author papers from their PhD theses in Science Citation Index journals**

Parte B. RESUMEN LIBRE DEL CURRÍCULUM (*máximo 3500 caracteres, incluyendo espacios en blanco*)

I am a conservation ecologist researching the effects of environmental change on populations and communities. I use multi-scale approaches from fine-scale studies of microclimate and habitat use; through landscape-scale research on metapopulation dynamics at range margins and in fragmented landscapes; to large-scale patterns and processes of distribution change. Lepidoptera form my main empirical research system.

During my PhD (1995-99), first post-doc (2000-03) and first permanent academic position (2007-18), I tested the factors governing high-latitude range margins, and the implications for the ecological effects of climate change. I have conducted long-term research on metapopulation dynamics in the butterfly *Hesperia comma* at its northern range margin (Thomas et al *Nature* 2001; Wilson et al *Proc R Soc B* 2009). In the past decade I obtained major grant funding in the UK to research the effects of microclimate on range expansion in this species (Bennie et al *Ecol Lett* 2013) including supervising a PhD (Lawson et al 2012 *J Appl Ecol*; 2014 *Conserv Lett*; 2014 *Ecography*). I am currently supervising three PhDs at the University of Exeter (UK) on Lepidoptera conservation and climate change.

I am interested in how patterns resulting from colonization and extinction in species distributions can help to inform conservation assessments. I held a postdoc on this topic in 2003, using UK butterfly atlas data as a focal system (Wilson et al 2004 *Nature*). In 2009-12, I directed meta-analyses of published evidence for extinction risk from climate change, finding that observed changes have been as fast as modelled changes to extinction risk (Maclean & Wilson 2011 *Proc Nat Acad Sci*). In 2009 I presented a report to the Bern Convention Group of Experts on Biodiversity & Climate Change focusing on threats to invertebrates. Another key strand of my research uses changes to species distributions to determine priorities for adapting conservation to climate change. Working with Ilya Maclean and Jon Bennie at the University of Exeter alongside conservation policymakers and practitioners, we have shown that microclimatic variation in England has buffered species against local extinction risk from climate change (Suggitt et al. 2018 *Nature Climate Change*).

My other key research line examines the effects of climate change on the low-latitude range margins of species distributions, and the dynamics of populations and communities over mountain elevation gradients. I held a Ramón y Cajal fellowship in 2003-07 at Universidad Rey Juan Carlos (Madrid), and with Dr David Gutiérrez showed marked uphill shifts in butterfly distributions and communities over 35 years (Wilson et al 2005 *Ecol Lett*; 2007 *Global Change Biol*), largely driven by population losses at low-elevation range margins. I supervised a PhD on this system (Gutiérrez Illán et al 2010 *Global Ecol Biogeogr, J Biogeogr*), and in 2017 I held a 6-month Fellowship at the Universidad Autónoma de Madrid to research ongoing effects of climate change on Lepidoptera in the Sierra de Guadarrama.

I became a permanent Research Scientist in Biogeography and Global Change at the MNCN (Madrid) in August 2018. In this new role I aim to address the factors determining the vulnerability of species and ecological communities and the scope for their conservation adaptation, using field research combined with historical material and datasets to test for ecological and evolutionary changes in response to recent climate change. As part of this research, I have recently obtained funding to conduct the project *Identifying climate change refugia using Iberian mountain butterflies* (RTI2018-096739-B-C21; 2019-2021).

Parte C. MÉRITOS MÁS RELEVANTES

C.1. Publicaciones en los últimos 5 años

1. Suggitt, A.J., **Wilson, R.J.**, Isaac, N.J.B., Beale, C.M., Auffret, A.G., August, T., Bennie, J.J., Crick, H.Q.P., Duffield, S., Fox, R., Hopkins, J.J., Macgregor, N.A., Morecroft, M.D.,

- Walker, K.J., Maclean, I.M.D. (2018) Extinction risk from climate change is reduced by microclimatic buffering. ***Nature Climate Change*** 8, 713–717
2. Maclean, I.M.D., Suggitt, A.J., **Wilson, R.J.**, Duffy, J.P., Bennie, J.J. (2017) Fine-scale climate change: modelling spatial variation in biologically meaningful rates of warming. ***Global Change Biology*** 23, 256-268.
 3. Gutiérrez, D., Vila, R., **Wilson, R.J.** (2016) Asymmetric constraints on limits to species ranges influence consumer-resource richness over an environmental gradient. ***Global Ecology and Biogeography*** 25, 1477-1488.
 4. Maclean, I.M.D., Hopkins, J.J., Bennie, J., Lawson, C.R., **Wilson, R.J.** (2015) Microclimates buffer the responses of plant communities to climate change. ***Global Ecology and Biogeography*** 24, 1340-1350.
 5. Nieto-Sánchez, S., Gutiérrez, D., **Wilson, R.J.** (2015) Long-term change and spatial variation in butterfly communities over an elevational gradient: driven by climate, buffered by habitat. ***Diversity and Distributions*** 21, 950-961.
 6. Gutiérrez, D., **Wilson, R.J.** (2014). Climate conditions and resource availability drive return elevational migrations in a single-brooded insect. ***Oecologia*** 175, 861-873.
 7. Lawson, C.R., Bennie, J.J., Hodgson, J.A., Thomas, C.D., **Wilson, R.J.** (2014) Topographic microclimates drive microhabitat associations at the range margin of a butterfly. ***Ecography*** 37, 732-740.
 8. Lawson, C.R., Bennie, J., Thomas, C.D., Hodgson, J.A., **Wilson, R.J.** (2014) Active management of protected areas enhances metapopulation expansion under climate change. ***Conservation Letters*** 7: 111-118.
 9. Lawson, C.R., Hodgson, J.A., **Wilson, R.J.**, Richards, S.A. (2014). Prevalence, thresholds and the performance of presence-absence models. ***Methods in Ecology and Evolution*** 5, 54-64.
 10. Bennie, J., Hodgson, J.A., Lawson, C.R., Holloway, C.T.R., Roy, D.B., Brereton, T., Thomas, C.D., **Wilson, R.J.** (2013) Range expansion through fragmented landscapes under a variable climate. ***Ecology Letters*** 16, 921-929.

C.2. Proyectos

1. RTI2018-096739-B-C21 - *Identifying climate change refugia using Iberian mountain butterflies*; Programa Estatal de I+D+i Orientada a los Retos de la Sociedad. Wilson, R.J. 01/19-12/21. Investigador Principal - €100,000.00.
2. 2016-T3/AMB-1073 - *The role of fine resolution topographic heterogeneity in providing refugia from climate change: distribution and conservation of the butterflies of the Sierra de Guadarrama*; Comunidad de Madrid Convocatoria De Ayudas Para La Atracción Talento Investigador 2016 Modalidad 3: Programa Cátedras De Excelencia. Wilson, R.J. 04/17-09/17. Investigador Principal – €50,000.00.
3. NE/N00857X/1 - *Effects of habitat and climate change on conservation of the Lulworth Skipper butterfly*; Natural Environment Research Council (NERC UK) Directed Training Grant (DTG). Wilson, R.J. & Bourn, N.A.D. 09/16-09/20. Investigador Principal – £86,676.00.
4. NE/M021599/1 - *Mitigating present and future climate risks to winemaking*; Natural Environment Research Council (NERC UK) Research Grant, Innovation. Maclean, I.M.D. & Wilson, R.J. 05/15-04/16. Investigador Principal – £124,445.00.
5. NE/L00268X/1 - *Using microclimate to adapt conservation to climate change*; Natural Environment Research Council (NERC UK) Research Grant, Knowledge Exchange. Wilson, R.J. & Maclean, I.M.D. 10/13-09/14. Investigador Principal – £113,986.00.

C.3. Contratos, méritos tecnológicos o de transferencia

Actividad Editorial

1. *Editor Asociado* de la Revista *Proceedings of the Royal Society of London Series B (Biological Sciences)*, 01/14 hasta el presente.
2. *Editor Asociado* de la Revista *Ecological Entomology*, 01/18 hasta el presente.

Informes científico-técnicas de la conservación

3. **Wilson, R.J.**, Gutiérrez Illán, J., Gutiérrez, D. (2015) Cambios experimentados por los lepidópteros de la Sierra de Guadarrama entre los periodos 1967-1973 y 2004-2005. in: *Impactos, Vulnerabilidad y Adaptación de los Bosques y la Biodiversidad de España frente al Cambio Climático* (ed M.A. Zavala, A. Herrero). Ministerio de Agricultura, Alimentación y Medio Ambiente, Madrid.
4. Suggitt, A.J., **Wilson, R.J.**, August, T.A., Beale, C.M., Bennie, J.J., Dordolo, A., Fox, R., Hopkins, J.J., Isaac, N.J.B., Jorieux, P., Macgregor, N.A., Marcetteau, J., Massimino, D., Morecroft, M.D., Pearce-Higgins, J.W., Walker, K., Maclean, I.M.D. (2014) *Climate change refugia for the flora and fauna of England*. Natural England Commissioned Reports 162.

Contribuciones a congresos

5. *Ponencia invitada: How microclimate and phenology can influence responses to climate change at species range margins*. Separating Environmental Changes and their effects on Community Traits in European Butterflies (sECURE) meeting – synthesis centre of the German Centre for integrative Biodiversity Research (iDiv). Leipzig (Germany), 05/17.
6. *Ponencia invitada: Topography, microclimate and population persistence in a changing climate*. 7th International Conference on the Biology of Butterflies. Turku (Finland), 08/14.

C.5 Actividad formadora.

Teses doctorales dirigidas desde 2013:

1. Donaldson, L. *Conservation and ecology of wetland birds in Uganda*. Univ. Exeter (UK) Defence: 10/12/2017. Co-Directores: I.M.D. Maclean, J.J. Bennie. Artículos publicados: Donaldson et al. *Biol Conserv* 2016 201: 414-422; *Biodiv Conserv* 2017 26: 527-552.
2. Zografou, K. *Diversity and distribution patterns of Lepidoptera and Orthoptera in Greece and their responses to local and global climate change*. Univ. Ioannina (Greece) Defence: 08/12/2014. Co-Directores: J. Halley, V. Kati, A. Grill. Artículos publicados: Zografou et al. *Biodiv Conserv* 2017 26: 1333-1351; *Ecol Entomol* 2015 40: 562-574; *PLOS One* 2014 9 (1), e87245.
3. Lawson, C.R. *From microhabitat to metapopulations: a model system for conservation under climate change*. Defence: 28/03/2013. Artículos publicados: Lawson et al. *Conserv Lett* 2014 7: 111-118; *Ecography* 2014 37: 732-740; *Methods in Ecol Evol* 2014 5: 54-64, *J Appl Ecol* 2012 49: 552-561.

Otros méritos de actividad formadora y de docencia:

- Asesor externo del tribunal de evaluación del Programa MSc Conservation Science (Ciencia de la Conservación), Imperial College, University of London, 10/13-09/18.
- Dirección de 2 trabajos fin de máster (MSc Biodiversity & Conservation) y 14 proyectos fin de carrera (BSc Biological Sciences) desde 2014 (Univ. Exeter, Reino Unido).
- Miembro de 7 tribunales de la lectura de tesis doctorales desde 2014.
- 3 asignaturas impartidas cada año desde 2014 en la Univ. Exeter para la titulación BSc Biological Sciences (2013-18): *Ecology* (nivel 1), *Ecology and Environment* (nivel 2), *The Ecology of Environmental Change* (nivel 3).