

ORLY RAZGOUR, PHD

Biological and Environmental Sciences
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Date of Birth: 30.07.1977

Nationality: British

I am a molecular ecologist and conservation biologist with research interests in global change biology. I consider biodiversity at all levels of organisation from genes to ecological interactions. My research is primarily multidisciplinary, combining novel genetic and genomic tools with spatial, ecological and mathematical modelling to investigate adaptations at the molecular and population levels and interactions between organisms and their environment. My research programme encompasses four main areas of investigation: 1) genomic approaches to studying species responses to climate change: investigating genetic adaptations and their population level consequences, 2) landscape genetics and the effect of environmental heterogeneity of range shifts, 3) phylogeography and evolutionary history, and 4) ecological modelling of distribution, dispersal and biotic interactions.

Current and Previous Positions

July 2015 – NERC Independent Research Fellow, University of Bristol, UK

July 2013-July 2015 – Impact Research Fellow, University of Stirling, UK

March-June 2013 – GIS Specialist, Bat Conservation Trust, UK

Jan-Feb 2013 – Contracted Consultant, woodland bats modelling project, Countryside Council for Wales

May 2012 – Invited Lecturer, MSc Ecology and Conservation Course, Nottingham Trent University, UK

March-May 2012 – Contracted Scientific Advisor on Joint Nature Conservation Consortium (JNCC) project

2009-2013 – Hourly-paid Teacher, University of Bristol, UK

Education

2009-2012 – **PhD**, University of Bristol, with **Faculty of Science Commendation**, “*From genes to landscapes: conservation biology of the grey long-eared bat, Plecotus austriacus, across spatio-temporal scales*” (Funded through the Bat Conservation Trust Research Scholarship)

2006-2008 – **MSc, Cum Laude**, Ben-Gurion University, “*The effect of microhabitat characteristics and interspecific Interactions on bat community patterns over natural water bodies in desert environments*” (Funded through Albert Katz MSc Scholarship)

2003-2006 – **BSc Hons**, 1st Class Distinction, University of Kent

Academic Awards

2014 – **John Marsden Medal** for best UK doctoral thesis in Biology, The Linnean Society of London

2013 – **Faculty of Science Commendation** for outstanding PhD thesis, University of Bristol

2012 – **Vincent Weir Scientific Award** for contribution to bat conservation research

2012 – Student talk prize Population Genetics Group Meeting, University of Glasgow

2011 – Student talk prize Ecological Genetics Group Meeting, London

2008 – **Merav Ziv Award** for MSc research project, Ben-Gurion University

2007 – **Frederick Siegmund Prize** for excellence in desert studies, Ben-Gurion University

2004-2006 – **Faculty and Rotary Prizes** for outstanding academic achievements, University of Kent

Research Grants

2015-2020 – NERC Independent Research Fellowship, ‘Developing an integrated framework for investigating biodiversity responses to global environmental change’, role: PI (£668,885)

2015 – Marie Skłodowska-Curie Action Fellowship (declined)

2014-2015 – British Ecological Society Research Grant, ‘Up in the air: researching ecological connectivity in sky island bats of the Ethiopian Highlands’, role: PI (£5,000)

2014-2015 – Rufford Small Grant Fund, ‘Using genetic tools to assess the conservation status of cave-dwelling bats’, PI Rachael Cooper-Bohannon (£12,000)

2014 – SAGES Early Career Researcher Exchanges Grant (£2,780)

- 2013-2015 – University of Stirling Impact Fellowship, ‘Fight or flight? The spatial genomics of bat species response to climate change’, role: PI (£72,000)
- 2012 – Funding to write a conservation management plan, through the Bat Conservation Trust (£13,200)
- 2011 – NERC Biomolecular Analysis Facility Project Grant, ‘Conservation genetics of the grey long-eared bat (*Plecotus austriacus*) across different spatial and temporal scales’, PI Gareth Jones (£20,604)
- 2010 – Vincent Weir funding for molecular diet analysis, role: PI (£4,134)

Publications

- Razgour O** (2015) Beyond species distribution modelling: a landscape genetics approach to investigating range shifts under future climate change. *Ecological Informatics* (*in press*)
- Alberdi A, Gilbert MTP, **Razgour O**, Aizpurua O, Aihartza J, Garin I (2015) Contrasting population-level responses to Pleistocene climatic oscillations in an alpine bat revealed by complete mitochondrial genomes and evolutionary history inference. *Journal of Biogeography* (*in press*)
- Razgour O**, Rebelo H, Puechmaille SJ, Juste J, Ibáñez C, Kiefer A, Burke T, Dawson DA, Jones G (2014) Scale-dependent effects of landscape variables on gene flow and population structure in bats. *Diversity and Distributions* 20: 1173–1185.
- Hope PR, Bohmann K, Gilbert MTP, Zepeda L, **Razgour O**, Jones G (2014) Second generation sequencing and morphological faecal analysis reveals unexpected foraging behaviour by Natterer's bat (*Myotis nattereri*) in winter. *Frontiers in Zoology* 11: 39.
- Razgour O**, Juste J, Ibáñez C, Kiefer A, Rebelo H, Puechmaille SJ, Arlettaz R, Burke T, Dawson DA, Beaumont M, Jones G (2013) The shaping of genetic variation in edge-of-range populations under past and future climate change. *Ecology Letters* 16: 1258–1266.
- Razgour O**, Whitby D, Dahlberg E, Barlow K, Hanmer J, Haysom K, McFarlane H, Wicks L, Williams C, Jones G (2013) Conserving grey long-eared bats (*Plecotus austriacus*) in our landscape: a conservation management plan. Available to download from www.bats.org.uk
- Razgour O** (2013) Grey long-eared bat in Jersey. *Societe Jersiaise Annual Bulletin* 31: 42–43.
- Razgour O**, Clare EL, Zeale MRK, Hanmer J, Bærholm Schnell I, Rasmussen M, Gilbert MTP, Jones G (2011) High-throughput sequencing offers insight into mechanisms of resource partitioning in cryptic bat species. *Ecology and Evolution* 1: 556–570.
- Razgour O**, Hanmer J, Jones G (2011) Using multi-scale modelling to predict habitat suitability for species of conservation concern: The grey long-eared bat as a case study. *Biological Conservation* 144: 2922–2930.
- Razgour O**, Korine C, Saltz D (2011) Does interspecific competition drive patterns of habitat use in desert bat communities? *Oecologia* 167: 493–502.
- Razgour O**, Korine C, Saltz D (2010) Pond characteristics as determinants of species diversity and community composition in desert bats. *Animal Conservation* 13: 505–513.

Publications in Review

- Razgour O**, Salicini I, Ibáñez C, Randi E, Juste J. Unravelling the evolutionary history and future prospects of endemic species restricted to former glacial refugia. Under 2nd review in *Molecular Ecology*.

Selected Conference Presentations

- Razgour O, Alberdi A, Salicini I, Ibáñez C, Randi E, Juste J. Insights from the past into biodiversity responses to future climate change using bats as a model. **International Biogeography Society Conference**, Bayreuth, Germany, Jan 2015 (oral presentation)
- Razgour O. Genetic approaches to studying species responses to climate change. **1st International Workshop on Cellular and Molecular Biology**, Pernambuco, Brazil, Nov 2014 – **Invited Speaker**
- Razgour O, Kleczkowski A. Modelling range shifts under future climate change in bats. **2nd Spatial Ecology and Conservation Conference**, Birmingham, July 2014 (oral presentation)
- Razgour O, Juste J, Ibáñez C, Rebelo H, Puechmaille SJ, Jones G. The shaping of genetic variation in the Mediterranean hotspot under past and future climate change. **EcoGenes Conference: Adapting to Global Change in the Mediterranean Hotspot**, Seville, Sep 2013 (poster)
- Razgour O, Juste J, Ibáñez C, Kiefer A, Rebelo H, Puechmaille SJ, Arlettaz R, Burke T, Dawson DA, Beaumont M, Jones G. The shaping of genetic variation in edge populations under past and future climate change: the grey long-eared bat as a case study. **46th Population Genetics Group Meeting**, Glasgow, Dec 2012 (oral presentation) – **Student Talk Prize**
- Razgour O, Dawson DA, Burke T, Rebelo H, Juste J, Ibáñez C, Kiefer A, Jones G. Living on the edge:

conservation genetics of the grey long-eared bat across spatial scales. **3rd European Congress of Conservation Biology**, Glasgow, Aug 2012 (poster)

Razgour O, Clare EL, Zeale MRK, Bærholm Schnell I, Rasmussen M, Gilbert MTP, Jones G. Next generation sequencing deciphers mechanisms of coexistence in cryptic bat species. **55th Ecological Genetics Group Meeting**, London, April 2011(oral presentation) – **Student Talk Prize**

Razgour O, Jones G. Linking habitat loss and bat decline: the conservation biology of the grey long-eared bat, **15th International Bat Research Conference**, Prague, Aug 2010 (oral presentation)

Razgour O, Korine C, Saltz D. The importance of temporary ponds for the conservation of insectivorous bats in desert environments. **22nd International Congress for Conservation Biology**, Tennessee, July 2008 (oral presentation)

Invited Research Seminars

2014 – Genetic approaches to studying species responses to climate change. **Federal University of Pernambuco**, Brazil, 1st Dec

2012 From genes to landscapes: multi-scale approaches for the conservation of bats. **Bristol Zoo Conservation Lectures**, Bristol, 5th Dec

Teaching Experience

2014-2015 – Dissertation Project Supervisor of two final year undergraduate students, University of Stirling

2015 – Lecturer on Conservation Management 4th year module, University of Stirling

2014 – Contributor, Mammal Field Techniques course, Federal University of Pernambuco, Brazil

2014 – PhD thesis Evaluator, Universidad de Murcia, Spain

2013-2015 – Tutor for undergraduate students, University of Stirling

2013 – Contributor, Field and Laboratory Techniques, University of Stirling

2012 – Lecturer on the MSc Ecology and Conservation course, Nottingham Trent University

2011-2012 – Staff on Bats Bugs and Biodiversity Field Course, University of Bristol

2009-2012 – Teaching Assistant, undergraduate and postgraduate courses including Evolutionary Biology, Statistics and Experimental Design, Diversity of Life, Ecology, University of Bristol

I have mentored two MSc and three PhD students in research, laboratory and data analysis skills; I have advised them on study design, modelling and statistical analysis.

Research Visits to Molecular Facilities

Sep-Dec 2011 – Natural Environments Research Council Biomolecular Analysis Facility, University of Sheffield, UK

Nov 2010 – Next Generation Sequencing Facility, Centre for GeoGenetics, University of Copenhagen, Denmark

Specialist Training

2014 Genomic Data Analysis, Transmitting Science, Barcelona, Spain (1 week)

2014 NERC Introduction to Mathematical Modelling for the Environmental and Biological Sciences Workshop, University of Stirling, UK (1 week)

2013 Standing up for Science Media Workshop, University of Glasgow, UK (1 day)

2013 Introduction to Genomics Workshop, University of Sheffield, UK (2 days)

2012 Bayesian Statistical Methods using R and OpenBugs, Glasgow, UK (1 day)

2012 Introduction to Linux and Biolinux, University of Bristol, UK (1 day)

2012 Advanced R course, University of Bournemouth, UK (3 days)

2010 Advanced Statistics course, University of Bristol, UK (1 week)

Research Skills

Fieldwork –wildlife surveying and sampling, including radio-tracking and trapping (mist nets, harp traps)

Molecular lab techniques – including DNA extractions, quality and quantity control, PCR, sequencing

Bioinformatics and molecular data analysis –Next Generation Sequencing data analysis (STACKS, Qiime), basic Linux/Unix, constructing phylogenetic trees (Mr Bayes, BEAST), Approximate Bayesian Computation of evolutionary and demographic history, population genetic analysis of microsatellite and SNP datasets (including STRUCTURE, PLINK, LFMM, Arlequin), primer design

Modelling, statistical and geographical analysis – extensive GIS (ArcGIS, R) and spatial analysis experience, Ecological Niche Modelling (Maxent), advanced statistical analysis (including GLM, GLMM, Bayesian statistics)

Project management – managing budgets; obtaining funding; employing, training and managing research assistants and volunteers; coordinating fieldwork and managing stakeholders and project collaborators

Languages – English (native), Hebrew (native), Spanish (fluent), French (basic), Arabic (basic)

Selected Public Engagement

Public lectures – to conservation practitioners, volunteers, wildlife groups and environmental consultants (including National Bat Conference, Bat Groups, Wildlife Trusts)

Public training workshops – bat survey methods (Jersey June 2011, 2013), guiding public bat walks

Consultation on science, planning and conservation – EU Habitat Directive Article 17 Reporting 2013; UK Biodiversity Action Plan Bat Steering Group Meeting (invited speaker 2012, 2013); Devon local planning authorities; Countryside Council for Wales; Bat Conservation Trust; Vincent Wildlife Trust

Contribution to popular science blogs – [Stirling Conservation Science](#); [Mammal Society 60th Anniversary](#)

Selected Research Press Coverage

2013 – Nature Climate Change (3: 781) Research Highlights “Genetic pinch”

2013 – [BBC News](#) (5.8.2013) “Rare bat on brink of extinction”. Interview by Victoria Gil

2013 – BBC Radio 4 today show (5.8.2013) – Interview about the conservation management plan

2013 – BBC World Service World Update (5.8.2013) – Interview about climate change and bat conservation

2013 – [ITV](#) 6pm West Country News (5.8.2013). “Decline in the bat population”. Interview by Jacquie Bird

2013 – [The New Scientist](#) (7.8.2013) “Beautiful British bat is one in just 1000” by Jacob Aron

2013 – [The Guardian Newspaper](#) (5.8.2013) “Britain’s grey long-eared bats may die out without help, conservationists warn”. Interview by Steven Morris

2013 – [Voice of Russia Radio](#) (5.8.2013) “UK’s most endangered mammal”, Interview by Tim Ecott

2012 – [BBC Mundo](#) (28.6.2012) “El misterioso susurro del murciélago orejudo” (the mysterious whisper of the long-eared bat). Interview by Alejandra Martins

2011 – ITV 6 pm [Channel News](#) (1.6.2011) “Rare bat attracts expert”. Interview by Jess Dunsdon

2011 – Bat News magazine (autumn/winter 2011) – 2 page interview about my PhD research

2010 – University of Washington [Conservation Magazine](#) “To the bat... pond” by David Malakoff

Journal Peer Review Service

Molecular Ecology, Molecular Ecology Resources, Heredity, Evolutionary Applications, Molecular Phylogenetics and Evolution, Biological Conservation, Conservation Genetics, Journal of Applied Ecology, Ecography, PLoS ONE, Landscape and Urban Planning, Mammalian Biology, Journal of Mammalogy, Canadian Journal of Zoology, Acta Chiropterologica

Professional Memberships

Bats without Borders (Research Director and board member); The Genetic Society; British Ecological Society; Society for Conservation Biology.

References

Prof Gareth Jones (PhD Supervisor)

Professor of Biological Sciences

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University of Bristol

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Dr Kirsty Park (Fellowship Mentor)

Senior Lecturer

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Dr Javier Juste (Research Collaborator)

Assistant Professor

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