

Tim CD Lucas

PERSONAL INFORMATION

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PUBLICATIONS

- 2015 **Lucas TCD***, Moorcroft EA*, Freeman R, Rowcliffe MJ, Jones KE. (2015) *A generalised random encounter model for estimating animal density with remote sensor data*. *Methods in Ecology and Evolution*. doi: 10.1111/2041-210X.12346 [[pdf](#)]
- 2013 Walters CL, Collen A, **Lucas TCD**, Mroz K, Sayer CA and Jones KE. (2013) Challenges of Using Bioacoustics to Globally Monitor Bats. in *Bat Evolution, Ecology, and Conservation*. Springer New York. 479-499.

* Co-first authors.

EDUCATION

	2012–present	University College London, CoMPLEX
PhD	<i>Social structure and network epidemiology in bat zoonoses</i> Description: I am using <i>complex networks</i> to study the epidemiology of bat-borne diseases. As bats carry a number of important <i>zoonotic diseases</i> , understanding the spread of these diseases within the bat population and how this affects spillover to humans and livestock is increasingly important. The unusually social nature of bat populations will strongly affect how diseases spread. Supervisors: Prof. Kate JONES & Dr Hilde WILKINSON-HERBOT	
	2011–2012	University College London, CoMPLEX
MRes	<i>Modelling Biological Complexity</i> · Merit Description: This was part of a combined MRes/PhD Program. It was an interdisciplinary course applying <i>quantitative methods</i> to the life sciences.	
	2006–2010	University of Sheffield, Animal & Plant Sciences
MBioSci	<i>Zoology</i> · First Description: For my final project I used <i>wavelet</i> analysis to study multi-annual <i>cycles in malaria</i> incidence in Thailand.	

RESEARCH EXPERIENCE

Internship	Autumn 2014	Zoön: An R package for reproducible SDMs
		I wrote the first version of an R package for <i>reproducible</i> Species Distribution Modelling. The package uses an online repository of user submitted 'modules' to allow the software to keep up with this fast moving field and allow analyses to be completely reproducible. [Github]
Summer Project	Summer 2012	Estimating abundances using acoustic data
		I adapted ' <i>ideal gas</i> ' models to acoustic data. I applied the model using R to a pan-European bat survey. We have worked on this project further, validating results with simulations, and the work is now published.
Case Presentation	May 2012	Pair approximations in spatial biology
		I compared a number of moment closures for a <i>pair-approximation</i> model of tree population growth to lattice simulations written in Mathematica. [pdf]
Case Presentation	Dec. 2011	Gaussian processes for bat identification
		I applied a novel <i>machine learning</i> method to a library of <i>bat calls</i> in Matlab. I compared the effectiveness of this method to standard machine learning methods applied in R. [pdf]
Volunteer Fieldwork	August 2011	Smithsonian Tropical Research Institute
		Two months fieldwork in Panamá on two projects: studying <i>Anolis dewlap</i> evolution and studying gut length plasticity in Red-eyed tree frogs.
Volunteer Fieldwork	May 2011	Chiloé Silvestre, Chile
		I spent two weeks trapping Darwin's foxes in Chile to collect samples for geophylogenetics.
Summer Internship	August 2010	University of Sheffield
		I studied the evolutionary response of plant communities to climate change with Dr Raj Whitlock. I collected, propagated and analysed plants collected from the field.
TRANSIT Internship	August 2009	University of York, YCCSA
		I studied collective foraging behaviour by programming a <i>complex 3D foraging simulation</i> in Java with Dr Jamie Wood and Dr John Pritchard at the York Centre for Complex Systems Analysis.

COMPUTER SKILLS

Languages	R (seven years), Python, Matlab, Mathematica, Java.
OS	Comfortable with Windows, Mac or Linux.
Other	Experience in Git/Github, unit testing, LaTeX, web design, markdown.

OTHER INFORMATION

Meetings	2014 · Presentation at CEH, Wallingford seminar series.
	2014 · Presentation at <i>id2oxford</i> conference.
	2014 · Poster at the CoMPLEX conference.
	2013 · Presentation at BritBats 2 [Slides].
	2013 · Invited attendance at <i>ecoVIZ</i> Tansley workshop.

2013 · Poster at the CoMPLEX conference and id2 conference. [\[pdf\]](#)

Teaching

2013–2014 · Online tutor for **SYSMIC**, a course for teaching quantitative skills to biologists.

Peer Review

Journals Reviewed for:

- Methods in Ecology and Evolution
- National Academy Science Letters

March 2, 2015