

DR NATALIE COOPER

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ORCID: [10000-0003-4919-8655](https://orcid.org/10000-0003-4919-8655) RESEARCHERID: [I-7976-2012](https://pubs.rsos.royalsocietypublishing.org/author/I-7976-2012)

RESEARCH INTERESTS

My research sits at the interface between macroecology and macroevolution, and aims to understand broad-scale patterns of biodiversity. I use cutting-edge phylogenetic comparative methods, morphological data collected from museum specimens, phylogenies, ecological data, species geographic range maps, fossils and various larger databases, to investigate a variety of questions including the influence of competition on macroevolutionary patterns, rates and modes of evolution, and the evolutionary ecology of zoonotic diseases.

ACADEMIC CAREER

2015-present	Researcher Life Sciences, Natural History Museum, London, UK.
2012-2015	Assistant Professor School of Natural Sciences, Trinity College Dublin, Ireland.
2010-2011	Postdoctoral Fellow Human Evolutionary Biology, Harvard University, USA.
2009-2010	Postdoctoral Associate Ecology and Evolutionary Biology, Yale University, USA.

EDUCATION

2005-2009	Ph.D, Phylogenetic approaches for studying competition in mammals Imperial College London & Institute of Zoology, London, UK. Supervisor: Prof. Andy Purvis; Co-supervisor: Prof. Kate Jones
2004-2005	M.Sc. (Distinction), Advanced Methods in Taxonomy and Biodiversity Imperial College London & Natural History Museum, London, UK.
2001-2004	B.Sc. (1st class honours), Biological Sciences University of Exeter, UK.

GRANTS AND AWARDS

2014	Society of Systematic Biologists (SSB) funding for symposium at Evolution 2014 on <i>The Dark Side of Phylogenetic Comparative Methods</i> .	\$4,000
2012	Marie Curie Career Integration Grant (CIG) for project <i>Evolutionary Ecology and Fossil Primates</i> .	€100,000
2012	Irish Research Council Embark Initiative Postgraduate Scholarship for project <i>Convergent Evolution in Malagasy Tenrecs</i> for Sive Finlay.	€72,000
2009	Seessel Postdoctoral Fellowship for <i>Innovative Research in Biological Sciences</i> .	\$37,000

PROFESSIONAL SERVICE

2014-present	Member of BES Publications Committee.
2014	Assistant at BES Macroecology Software Carpentry workshop.
2013-present	Organiser of #MacroJC, a tri-continental online macroevolution journal club.
2013-2015	Member of School of Natural Sciences INTEGER committee on Gender Equality (and website maintainer).
2013-2015	Evolutionary Biology & Ecology seminar series organiser at TCD.
2012-2015	Staff administrator and developer of the EcoEvo@TCD blog at TCD.
2012-2015	Organiser of NERD club, a weekly Ecology and Evolution research group meeting for staff and PhD students across the School of Natural Sciences at TCD.
2013	Organiser of “Spatial Analysis in R” workshop for BES Macroecology and Computational Ecology Special Interest Groups.
2013-present	Grant reviewer for UK Natural Environment Research Council (NERC).
2013-present	Grant reviewer for Canadian National Science Foundation (NSERC).
2012-present	Member of British Ecological Society (BES) including Macroecology Group.
2013-present	Member of Society of Systematic Biologists.

INTERNATIONAL CONFERENCE PRESENTATIONS

2014	Linnaean Society	Radiations & Extinctions meeting: Reproducibility in macroevolution (invited).
2014	Evolution	The “Dark Side” of phylogenetic comparative methods (symposium).
2013	ESEB	Ecological correlates of extrinsic mortality in mammals and birds (poster).
2013	Evolution	Ecological correlates of extrinsic mortality in mammals and birds.
2012	Evolution	Host phyllospecificity and parasite sharing in primates and humans.
2011	EEID	Methods for detecting phylogenetic host specificity in parasites (poster).
2010	Evolution	Phylogenetic niche conservatism in mammals.
2008	Evolution	A common pattern of overdispersion in mammalian assemblages.

INVITED SEMINARS

- 2014 Biosciences Seminar Series, Swansea University.
- 2014 Centre for Ecology & Conservation Seminar Series, University of Exeter.
- 2014 Ecology, Evolution, Behaviour & Environmental Economics Seminar Series, Queens University, Belfast.
- 2014 Biology & Environmental Science Seminar Series, University College Dublin.
- 2013 Ecology & Environment Seminar Series, University of Southampton.
- 2013 Ecology, Evolution & Environment Seminar Series, University of Sheffield.
- 2013 Biological Sciences Seminar Series, University of Liverpool.
- 2013 Evolutionary Morphology (EvMorph) Seminar Series, University of Chicago.
- 2013 Earth & Environment Seminar Series, Trinity College Dublin.
- 2011 Museum of Comparative Zoology Seminar Series, Harvard University.

PUBLIC ENGAGEMENT AND OUTREACH

- 2014 Organiser of [SoapBox Science Ireland](#) - an outreach event featuring women in science explaining their research in an interactive way.
- 2014 Talk for Dublin University Zoological Society on *Gender Inequality in Science & the Media*.
- 2014 Interviewed on “The Morning Edition” on RTE1 and “FutureProof” on NewsTalk FM about our paper [Dying without wings](#). See press release [here](#).
- 2013 Arranged filming of [Research Profiles](#) for female staff and students as part of the INTEGER Gender Equality project. My video is on my [website](#).
- 2013 Organised a [Three Minute Thesis](#) video competition for PhD students.
- 2013 & 2014 Organiser and tour guide for [Discover Research Dublin](#) at the TCD Zoology Museum, as part of European Researcher’s Night.
- 2013 & 2014 Presented a session on *What can we learn from skeletons?* for Transition Year students (16-17 years).
- 2013-2015 [EcoEvo@TCD blog](#) developer and contributor. The blog has had over 44,300 views and won Best Science & Technology blog in 2014 at the Irish Blog Awards.
- 2012-present Active Twitter user ([@nhcooper123](#)) with over 1200 followers and over 6000 tweets.
- 2013 & 2014 Blog post contributor at [SoapBoxScience](#) and [Science Policy and Outreach Online](#).

TEACHING EXPERIENCE

POSTGRADUATE STUDENT SUPERVISION

PhD	2012-2015	Thomas Guillerme	Evolutionary ecology and primates	TCD
MRes	2012-2015	Sive Finlay	Morphological disparity in tenrecs	TCD
MSc	2013	Marta Capolei	Host phylospecificity in parasites	TCD
MSc	2008	Paddy Brock	Co-supervised with Andy Purvis	Imperial
MSc	2007	Peter Hayward	Co-supervised with Andy Purvis	Imperial
MSc	2007	Jack Lighten	Co-supervised with Andy Purvis	Imperial

UNDERGRADUATE AND TAUGHT POSTGRADUATE

2012-2015	Intro to Biodiversity, Evolution & the Environment	Year 1	TCD
2012-2015	Comparative Physiology (Vertebrate Biomechanics)	Year 3	TCD
2013-2015	Research Comprehension (module coordinator)	Year 4	TCD
2013-2014	Tropical Ecology Field Course	Year 4	TCD
2012-2015	Final Year Research Projects	Year 4	TCD
2009	Biodiversity & Conservation	Year 3	Imperial
2012-2014	Taxonomy & Systematics	MSc	TCD

POSTGRADUATE, POSTDOCS AND STAFF

2014	Linnaean Society Radiations & Extinctions workshop	All	-
2013-2015	Computer Skills (LaTeX, R, git etc.)	All	TCD
2013	Introduction to R for the terrified!	Staff	TCD
2012-2015	Transferable Skills at NERD club	All	TCD
2010-2012	AnthroTree Phylogenetic Comparative Methods workshop	All	-
2010-2011	R (& Statistics) Help Hour	All	Harvard

JOURNAL REVIEWING

The American Naturalist, Animal Conservation, BMC Evolutionary Biology, Conservation Biology, Ecology, Ecology and Evolution, Ecology Letters, Evolution, Global Ecology & Biogeography, International Journal of Primatology, Journal of Animal Ecology, Journal of Biogeography, Journal of Evolutionary Biology, Methods in Ecology & Evolution, Oecologia, Philosophical Transactions of the Royal Society: B, PLoS One, Proceedings of the National Academy of Sciences USA, Proceedings of the Royal Society: B, Trends in Ecology & Evolution.

PUBLICATIONS LIST

I have 22 peer-reviewed papers in internationally recognised journals (10 first authored, one joint first authored, two last/senior authored and 14 without my PhD supervisor Andy Purvis). My h-index is 14 on [Google Scholar](#) and 13 on [ISI Web of Science](#).

PEER-REVIEWED PUBLICATIONS

2015

Finlay, S. & **Cooper, N.** 2015. Morphological diversity in tenrecs (Afrosoricida, Tenrecidae): comparing tenrec skull diversity to their closest relatives. *PeerJ*. **3**, e927. doi: [10.7717/peerj.927](#). See summary [here](#).

Nunn, C.L., & **Cooper, N.** 2015. Investigating evolutionary lag using the species-pairs evolutionary lag test (SPELT). *Evolution*. **69**, 245253. doi: [10.1111/evo.12520](#).

2014

Healy, K., Guillerme, T., Finlay, S., Kane, A., Kelly, S.B.A., McClean, D., Kelly, D.J., Donohue, I., Jackson, A.L., & **Cooper, N.** 2014. Ecology and mode-of-life explain lifespan variation in birds and mammals. *Proceedings of the Royal Society of London Series B: Biological Sciences*. **281**, 20140298. doi: [10.1098/rspb.2014.0298](#). See summary [here](#).

Kelly, S.B.A, Kelly, D.J., **Cooper, N.**, Bahrn, A., Analuddin, K. & Marples, N. 2014. Molecular and phenotypic data reveal a cryptic species (Aves: *Dicaeum*) from the unique and understudied Sulawesi region. *PLoS ONE*. **9**, e98694. doi: [10.1371/journal.pone.0098694](#). See summary [here](#).

2013

Cooper, N., & Nunn, C.L. 2013. Identifying future zoonotic disease threats: Where are the gaps in our understanding of primate infectious diseases? *Evolution, Medicine and Public Health*. **2013**, 26-37. doi: [10.1093/emph/eot001](#). See summary [here](#).

Kamilar, J.M. & **Cooper, N.** 2013. Phylogenetic signal in primate behaviour, ecology, and life history. *Philosophical Transactions of the Royal Society of London Series B: Biological Sciences*. **368**, 20120341. doi: [10.1098/rstb.2012.0341](#).

Healy, K., McNally, L., Ruxton, G.D., **Cooper, N.**, & Jackson, A.L. 2013. Metabolic rate and body size are linked with perception of temporal information. *Animal Behaviour*. **86**, 685-696. doi: [10.1016/j.anbehav.2013.06.018](#). **F1000 recommended**.

2012

Cooper, N., Griffin, R., Franz, M., Omotayo, M., & Nunn, C.L. 2012. Phylogenetic host specificity and understanding parasite sharing in primates. *Ecology Letters*. **15**, 1370-1377. doi: [10.1111/j.1461-0248.2012.01858.x](https://doi.org/10.1111/j.1461-0248.2012.01858.x). **F1000 recommended**.

Cooper, N., Kamilar, J.M., & Nunn, C.L. 2012. Host longevity and parasite species richness in mammals. *PLoS ONE*. **7**, e42190. doi: [10.1371/journal.pone.0042190](https://doi.org/10.1371/journal.pone.0042190).

Davies, T.J., **Cooper, N.**, Diniz Filho, J.A.F, Thomas, G.H. & Meiri, S. 2012. Using phylogenetic trees to test for character displacement: a model and an empirical example from a desert mammal community. *Ecology*. **93**, S44-S51. doi: [10.1890/11-0400.1](https://doi.org/10.1890/11-0400.1).

2011

Cooper, N., Freckleton, R.P. & Jetz, W. 2011. Phylogenetic conservatism of environmental niches in mammals. *Proceedings of the Royal Society of London Series B: Biological Sciences*. **278**, 2384-2391. doi: [10.1098/rspb.2010.2207](https://doi.org/10.1098/rspb.2010.2207).

Freckleton, R.P., **Cooper, N.** & Jetz, W. 2011. Comparative methods as a statistical fix: the dangers of ignoring an evolutionary model. *The American Naturalist*. **178**, E10-E17. doi: [10.1086/660272](https://doi.org/10.1086/660272).

Collen, B., McRae, L., Deinet, S., De Palma, A., Carranza, T., **Cooper, N.**, Loh, J. & Baillie, J.E.M. 2011. Predicting how populations decline to extinction. *Philosophical Transactions of the Royal Society of London Series B: Biological Sciences*. **366**, 2577-2586. doi: [10.1098/rstb.2011.0015](https://doi.org/10.1098/rstb.2011.0015).

2010

Cooper, N., Jetz, W. & Freckleton, R.P. 2010. Phylogenetic comparative approaches for studying niche conservatism. *Journal of Evolutionary Biology*. **23**, 2529-2539. doi: [10.1111/j.1420-9101.2010.02144.x](https://doi.org/10.1111/j.1420-9101.2010.02144.x).

Cooper, N. & Purvis, A. 2010. Body size evolution in mammals: complexity in tempo and mode. *The American Naturalist*. **175**, 727-738. doi: [10.1111/j.1420-9101.2009.01714.x](https://doi.org/10.1111/j.1420-9101.2009.01714.x).

Belmaker, J., **Cooper, N.**, Lee, T.M. & Wilman, H. 2010. Specialization and the road to academic success. *Frontiers in Ecology and the Environment*. **8**, 514-515. All authors contributed equally. doi: [10.1890/10.WB.25](https://doi.org/10.1890/10.WB.25).

2009

Cooper, N. & Purvis, A. 2009. What factors shape rates of phenotypic evolution? A comparative study of cranial morphology of four mammalian clades. *Journal of Evolutionary Biology*.

22, 1024-1035. doi: [10.1111/j.1420-9101.2009.01714.x](https://doi.org/10.1111/j.1420-9101.2009.01714.x).

Bielby, J., Cardillo, M. **Cooper, N.**, & Purvis, A. 2009. Modeling extinction risk in multispecies data sets: phylogenetically independent contrasts versus decision trees. *Biodiversity and Conservation*. **19**, 113-127. doi: [10.1007/s10531-009-9709-0](https://doi.org/10.1007/s10531-009-9709-0).

2008

Cooper, N., Rodriguez, J. & Purvis, A. 2008. A common tendency for phylogenetic overdispersion in mammalian assemblages. *Proceedings of the Royal Society of London Series B: Biological Sciences*. **275**, 2031-2037. doi: [10.1098/rspb.2008.0420](https://doi.org/10.1098/rspb.2008.0420).

Cooper, N., Bielby, J., Thomas, G.H. & Purvis, A. 2008. Macroecology and extinction risk correlates of frogs. *Global Ecology and Biogeography*. **17**, 211-221. doi: [10.1111/j.1466-8238.2007.00355.x](https://doi.org/10.1111/j.1466-8238.2007.00355.x).

Meiri, S., **Cooper, N.** & Purvis, A. 2008. The island rule: made to be broken? *Proceedings of the Royal Society of London Series B: Biological Sciences*. **275**, 141-148. doi: [0.1098/rspb.2007.1056](https://doi.org/10.1098/rspb.2007.1056).

Bielby, J., **Cooper, N.**, Cunningham, A., Garner, T. & Purvis, A. 2008. Predicting susceptibility to future declines in the world's frogs. *Conservation Letters*. **1**, 82-90. doi: [10.1111/j.1755-263X.2008.00015.x](https://doi.org/10.1111/j.1755-263X.2008.00015.x).

NON PEER-REVIEWED PUBLICATIONS

Cooper, N. & Belmaker, J. 2010. Opinion: Habitat data resolution and the detection of species interactions. *Frontiers of Biogeography*. **2**, 46.