

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 topics including the influence of competition on macroevolution, rates and modes of evolution, convergent evolution in various taxa (including tenrecs and river dolphins), macroevolutionary analyses with fossil and living species, responses of cetaceans to past and current climate change, and dinosaur morphological diversity. I regularly share the outputs of my research with the public through Natural History Museum events like Dinosnores, Science Uncovered and Museum Lates.

ACADEMIC CAREER

2015-present	Researcher Life Sciences (Vertebrates), 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

2016	BBSRC STARS Grant. <i>Advancing computational and data literacy skills schools for Life Scientists.</i>	£42,738
2016	Co-PI on Leverhulme Research Project Grant (PI: Andrea Waeschenbach). <i>Molecules meet fossils - an integrated approach to studying marine palaeodiversity.</i>	£350,090
2015	British Ecological Society funding for project <i>A Whale of a Time: how have changing human pressures through time affected the ecology of rorqual whales (Balaenopteridae).</i>	£5,000
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

2016	Organiser of BES Macroecology SIG Early Career Mentoring event, London.
2016	Organiser of BES Macroecology SIG annual meeting, University of Oxford.
2016	Organiser of London Vertebrate Researchers Meeting.
2016	Member of Methods in Ecology & Evolution code archiving strategy group.
2016-present	Organiser of cross-departmental NHM Macroevolution Journal club.
2015-present	NHM Athena SWAN committee member.
2015	PhD External Examiner, Kevin Arbuckle, University of Liverpool.
2015-present	Associate Editor at Methods in Ecology & Evolution.
2015-present	Deputy Secretary of BES Macroecology Special Interest Group committee.
2014-present	Member of BES Publications Committee.
2014	Assistant at BES Macroecology Software Carpentry workshop.
2013-2015	Organiser of #MacroJC, a tri-continental online macroevolution journal club.
2013-2015	Co-chair of School of Natural Sciences INTEGER and Athena SWAN Gender Equality committees, achieving Bronze accreditation in 2015.
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

2016	Evolution	Skeletons in the closet: using NHM collections for evolutionary research (poster)
2015	MEE	Methods in Ecology & Evolution 5th anniversary symposium: The limitations of PCMs (invited)
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

2016	Edward Grey Institute for Ornithology, University of Oxford.
2016	CMEC (Centre for Macroecology Evolution & Climate), University of Copenhagen, Denmark.
2015	Biological Sciences Seminars, University of Lausanne, Switzerland.
2015	LERN: London Evolutionary Research Network (guest speaker).
2015	BLAM: Biology at Lund Annual Postgraduate Symposium (plenary speaker). Lund University, Sweden.
2015	Bioscience Seminars, Dublin City University, Dublin.
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.

INVITED PANEL MEMBER FOR PANEL DISCUSSIONS

- 2016 Practical Tips for Reproducible Science. BES Macroecology Special Interest Group annual meeting, Oxford.
- 2015 The Future of Data Archiving. BES annual meeting, Edinburgh.
- 2015 The Future of the Publications Circus. EUMacro meeting, Copenhagen, Denmark.
- 2014 Applying for Postdoctoral Jobs. BES Macro meeting, Nottingham.

PUBLIC ENGAGEMENT AND OUTREACH

- 2016-present [Macro at the Museum](#) blog.
- 2016 Surviving cold weather, NHM Dinosnores for Kids.
- 2016 Leading Ladies tour, NHM Lates.
- 2016 Animal penises, NHM Dinosnores for Grownups.
- 2015-2016 Science Uncovered at the Natural History Museum (participant).
- 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 65,000 views and won Best Science & Technology blog in 2014 at the Irish Blog Awards.
- 2012-present Active Twitter user ([@nhcooper123](#)) with over 2000 followers and over 8000 tweets.
- 2013 & 2014 Blog post contributor at [SoapBoxScience](#) and [Science Policy and Outreach Online](#).

TEACHING EXPERIENCE

POSTGRADUATE STUDENT SUPERVISION

PhD	2012-2015	Thomas Guillerme	Macroevolution in living & fossil species	TCD
MSci	2016-2017	Charlotte Page	Convergence in river dolphins	UCL
MRes	2016	Dan Bell	Allometry in cetaceans	Imperial
MRes	2016	Guillermo Gilbert	Biogeography of Galapagos birds	Imperial
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

2016	PGLS in theory and in R	MRes	UCL
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

2016	BES Best Practiced for Code Archiving workshop	All	-
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, Biological Reviews, BMC Evolutionary Biology, Conservation Biology, Ecography, Ecology, Ecology and Evolution, Ecology Letters, Evolution, Global Ecology & Biogeography, International Journal of Primatology, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Biogeography, Journal of Evolutionary Biology, Methods in Ecology & Evolution, Nature Communications, Nature 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, Proceedings of the Royal Society: Interface, Trends in Ecology & Evolution.

PUBLICATIONS LIST

I have 25 peer-reviewed papers in internationally recognised journals, one in press and one currently in review. My h-index is 16 on [Google Scholar](#) and 13 on [ISI Web of Science](#).

PEER-REVIEWED PUBLICATIONS

2016

Cooper, N., Thomas, G.H., & FitzJohn, R.G. 2016. Shedding light on the "Dark Side" of phylogenetic comparative methods. *Methods in Ecology and Evolution*. **7**, 693-699. doi: [10.1111/2041-210X.12533](#).

Guillerme, T. & **Cooper, N.** 2016. Assessment of available anatomical characters for linking living mammals to fossil taxa in phylogenetic analyses. *Biology Letters*. **12**, 20151003. doi: [10.1098/rsbl.2015.1003](#).

Guillerme, T. & **Cooper, N.** 2016. Effects of missing data on topological inference using a Total Evidence approach. *Molecular Phylogenetics and Evolution*. **94**, 1461-58. doi: [10.1016/j.ympev.2015.08.023](#). See summary [here](#).

Cooper, N., Thomas, G.H., Venditti, C., Meade, A. & Freckleton, R.P. 2016. A cautionary note on the use of Ornstein Uhlenbeck models in macroevolutionary studies. *Biological Journal of the Linnean Society*. **118**, 64-77. doi: [10.1111/bij.12701](#).

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**, 2452-53. 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/eoto01](https://doi.org/10.1093/emph/eoto01). 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](https://doi.org/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](https://doi.org/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. & Bailie, 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.

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