**Dr. Anthony Caravaggi**

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ACADEMIC QUALIFICATIONS

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| **Date** | **Qualification** | **Topic** | **Organisation** |
| 2016 | PhD | Conservation biology | Queen’s University Belfast |
| 2011 | MRes | Biodiversity and conservation | University of Leeds |
| 2009 | BSc (Hons) | Zoology with conservation | Bangor University |

CAREER HISTORY

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| **Date** | **Job Title** | **Department** | **Organisation** |
| 2017- | PhD | School of BEES | University College Cork |
| 2017-18 | Visiting Research Fellow | Biological Sciences | Queen’s University Belfast |

***Professional activities***

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| --- | --- |
| Associate Editor | *Remote Sensing in Ecology and Conservation* |
| Peer reviewer | *African Journal of Ecology; Austral Ecology; Biological Conservation; Bird Study; Canadian Journal of Zoology; Diversity and Distributions; Global Change Biology; Journal of Natural History; Journal of Zoology; Mammal Communications; Mammal Research; Mammal Review; PLOS One; Remote Sensing in Ecology and Conservation; The European Zoological Journal; Zoo Biology.* |
| Funding review | British Ecological Society Grant Review College; Croatian Science Foundation |

RESEARCH

I employ field and laboratory-based experiments, along with archival data, to answer specific questions relating to the ecology of species and communities to inform conservation, management and policy-related processes. My current work includes an analysis of mammal activity patterns, landscape-scale habitat and distribution modelling, quantification of the impacts of non-native rodents on insular seabirds and an assessment of wildlife management practises.

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| Research Interests | Conservation biology; urban ecology; invasive species; population & community ecology; movement & spatial ecology; rare and endangered species; sustainability; rewilding; citizen science |

**PUBLICATIONS**

***Peer-reviewed journals***

|  |  |
| --- | --- |
| 2018 | ***Caravaggi A***, Plowman A, Wright D, Bishop C. (2018) The composition of captive ruffed lemur (*Varecia* spp.) diets in UK zoological collections, with reference to the problems of obesity and iron storage disease. *Journal of Zoo Animal Research.* 6: 51-49. |
| 2017 | O'Halloran J, Kelly TC, Quinn JL, Irwin S, Fernández-Bellon D, **Caravaggi A**, Smiddy P. Current ornithological research in Ireland: seventh Ornithological Research Conference, UCC, November 2017. *Irish Birds*. 10: 598–638. |
| 2017 | Havlin P, **Caravaggi A**, Montgomery WI. The diet and abundance of an introduced insular population of Red-Necked Wallabies, *Macropus rufogriseus*. *Canadian Journal of Zoology*. 96(4): 357-365. |
| 2017 | **Caravaggi A**, Montgomery WI, Reid N. Management and control of invasive brown hares (*Lepus europaeus*): contrasting attitudes of selected environmental stakeholders and the wider rural community. *Proceedings of the Royal Irish Academy: Biology & Environment*. 117B:1-11. |
| 2017 | Tennant JP, Graziotin D, Jacques DC, Waldner F, Dugan JM, Mietchen D, Elkhatib Y, Collister LB, Pikas CK, Crick T, Masuzzo P, **Caravaggi A**, *et al*. A multi-disciplinary perspective on emergent and future innovations in peer review. *F1000Research*. 6:1151. |
| 2017 | **Caravaggi A**, Banks P, Burton C, Finlay CMV, Hayward M, Haswell, PM, Rowcliffe JM, Wood M. A review of camera trapping for conservation behaviour research. *Remote Sensing in Ecology and Conservation*. doi: 10.1002/rse2.48. |
| 2017 | Caravaggi A. remBoot: An R package for Random Encounter Modelling. *Journal of Open Source Software*. 2(10). |
| 2017 | **Caravaggi A**, Leach K, Santilli F, Rintala J, Helle P, Tiainen J, Bisi F, Martinoli A, Montgomery WI, Reid N. Niche overlap of mountain hare subspecies and the vulnerability of their ranges to invasion by the European hare; the (bad) luck of the Irish. *Biological Invasions*. 19(2): 655-674. |
| 2016 | **Caravaggi A**, Zaccaroni M, Riga F, Schai-Braun SC, Dick JTA, Montgomery WI, Reid N. An invasive-native mammalian species replacement process captured by camera trap survey Random Encounter Models. *Remote Sensing in Ecology and Conservation*. 2: 45-58. |
| 2015 | **Caravaggi A**, Montgomery WI, Reid N. Range expansion and comparative habitat use of insular, congeneric lagomorphs: invasive European hares *Lepus europaeus* and endemic Irish hares *Lepus timidus hibernicus*. *Biological Invasions*. 17(2): 687-698. |

***In review***

**Caravaggi A**, Vallely M-C, Hogg K, Freeman M, Fadaei E, Reid N, Dick JTA, Tosh D. Circadian activity, occurrence, and predator-prey relationships of free-ranging mammals revealed by camera traps. *PeerJ.*

**Caravaggi A**, Cuthbert RJ, Ryan RG, Cooper J, Bond AL. The cumulative impacts of introduced house mice on the breeding success of nesting seabirds on Gough Island. *Ibis*.

**Caravaggi A,** Irwin S, Lusby J, Ruddock M, O'Toole L, Mee A, Nagle T, O'Neill S, Tierney D, O'Halloran J. Factors affecting territory site selection and breeding parameters of Hen Harriers, *Circus cyaneus*, in Ireland. *Biological Conservation.*

***Book chapters***

**Caravaggi A** (*in press*) Lagomorpha Life History. In: Vonk J, Shackelford TK (eds.) *Encyclopedia of Animal Cognition and Behavior*. Springer. ISBN 9783319550657

**Caravaggi A** (*in press*) Lagomorpha Navigation. In: Vonk J, Shackelford TK (eds.) *Encyclopedia of Animal Cognition and Behavior*. Springer. ISBN 9783319550657

***Other publications***

|  |  |
| --- | --- |
| 2017 | **Caravaggi A**, James K. Twittersphere: Conferencing in 140 characters. *Nature Correspondence.* 549: 458 |

TEACHING

As a teacher I aim to provide my students with skills, knowledge and confidence critical to their academic and personal development. I take an inclusive approach, developing strong relationships and encouraging discussion. I am currently working towards a Postgraduate Certificate in Teaching and Learning in Higher Education qualification and intend to pursue a HEA Teaching Fellowship.

***Module development***

|  |  |
| --- | --- |
| 2017 | *BL6024 Quantitative skills for biologists using R*.  Quantitative skills required by postgraduate students to successfully conduct and publish their research, with a focus on data analysis and graphing, statistics, and basic modelling, as generally implemented by zoologists and ecologists. |

***Teaching***

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| 2017 | BL6024 Quantitative skills for biologists using R. |
| 2016 | South American rainforest biodiversity and conservation. |
| 2015 | Introduction to GIS (*Teaching Assistant*) |
| 2015 | Animal Biology (*Teaching Assistant*) |
| 2014-2015 | Undergraduate residential field course |
| 2014 | Bird survey techniques |

***Thesis supervision***

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| **Date** | **Degree** | **Organisation** |
| 2017- | MRes | University College Cork |
| 2017 | BSc | University College Cork |
| 2015 | MSc | Queen’s University Belfast |
| 2015 | MSc | Queen’s University Belfast |
| 2014 | MSc | Queen’s University Belfast |
| 2013 | MSc | Queen’s University Belfast |
| 2013 | BSc | Queen’s University Belfast |

FELLOWSHIPS, FUNDING AND AWARDS

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| **Date** | **Award** | **Value** | **Organisation** |
| 2017 | Project tender | £174,000 | National Parks and Wildlife Service |
| 2017 | Visiting Research Fellow | - | Queen’s University Belfast |
| 2015 | Training and Travel grant | £500 | British Ecological Society |
| 2014 | Research grant | £2,000 | People's Trust for Endangered Species |
| 2012 | PhD studentship | £82,720 | Northern Ireland Environmental Agency |
| 2010 | Master’s scholarship | £7,500 | Natural Environment Research Council |

PRESENTATIONS

***Conferences (talks)***

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| --- | --- |
| 2017 | International Congress for Conservation Biology, Cartagena. |
| 2017 | World Seabird Twitter Conference. |
| 2017 | The Mammal Society, Newcastle (*invited keynote*). |
| 2017 | Mammal Society Spring Conference, Cambridge. |
| 2016 | British Ecological Society Annual Meeting, Liverpool. |
| 2016 | North Wales Mammal Symposium, Bangor |
| 2016 | The Mammal Society, Lancaster (*invited keynote*). |
| 2016 | Mammal Society Spring Conference, Yarnfield |
| 2015 | 7th European Congress of Mammalogy, Stockholm, Sweden. |
| 2015 | Vth International Wildlife Management Congress, Sapporo, Japan. |
| 2015 | Mammal Society Spring Conference, Lancaster. |
| 2014 | Mammal Society Spring Conference, Birmingham. |
| 2013 | 11th International Mammal Congress, Belfast. |
| 2013 | Mammal Society Student Conference, Staffordshire. |
| 2012 | 2nd All Ireland Mammal Symposium (AIMS), Dublin |
| 2012 | 4th World Lagomorph Conference, BOKU, Vienna. |
| 2009 | 11th BIAZA Research Symposium, Blackpool. |

***Invited seminars***

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| 2014 | Biological Sciences, Bangor University. |

CONFERENCE ORGANISATION

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| 2017 | 7th Irish Ornithological Congress, Cork (*scientific committee*). |
| 2017 | Biotweeps Twitter Conference (*principal organiser*). |
| 2014-17 | Mammal Society Student Conferences, various (*principal organiser*). |

PERSONAL DEVELOPMENT

***Training and workshops***

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| 2017 | Postgraduate Certificate in Teaching and Learning in Higher Education |
| 2017 | Advanced Training in Systematic Review and Meta-Analysis |
| 2017 | Level 3 Teaching Assistant |
| 2017 | Engagement and Public Outreach |
| 2017 | Remote mammal surveying (*workshop*) |
| 2016 | Mentorship training |
| 2016 | Developments in conservation ecology (*workshop*) |
| 2016 | Acoustic analysis of marine mammal vocalisations (*workshop*) |
| 2012 | Lagomorph systematics (*workshop*) |

***Licenses and certification***

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| --- | --- |
| 2018 | LAST Ireland (animal welfare in research; License no: 09-2018) |
| 2014 | ASPA laboratory animal handling license (TSA/47/14) |
| 2014 | Emergency first aid; field first aid |
| 2012 | BTO bird ringing 'C' license |
| 2008 | Marine mammal medic, BDMLR |
| 2002 | Full manual UK driving license, held without incident or penalty |

***Societal memberships (since)***

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| --- | --- |
| 2017 | British Ornithologist's Union |
| 2015 | South Wales Mammal Group |
| 2015 | Welsh Ornithological Society |
| 2013 | Society of Conservation Biology (SCB) |
| 2012 | The Mammal Society |
| 2012 | British Ecological Society |
| 2011 | Royal Society of Biology |
| 2009 | The British Trust for Ornithology |

***Organisational and working groups (since)***

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| --- | --- |
| 2017 | SCB Participatory and Citizen Science working group |
| 2016-17 | South Wales Mammal Group (*committee*) |
| 2016 | Mammal Society Council (*Student Engagement Officer*) |
| 2012 | SCB Urban Ecology working group |

***Additional roles***

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| 2016-18 | University Mammal Challenge, The Mammal Society (*coordinator*) |
| 2016 | Session chair, British Ecological Society Annual Meeting |
| 2016 | National Geographic – advisor on red fox ecology |
| 2016 | British Ecological Society Women in Ecology (WIE) mentor |
| 2015-17 | Lagomorph consultant, The Mammal Society |
| 2013-17 | UK STEM Ambassador |
| 2013 | Wildlife consultant, Biological records for the North East of Scotland (NESBReC) |
| 2012-15 | EBEE postgraduate representative, Queen's University Belfast |
| 2012-15 | SBS Athena SWAN committee, Queen's University Belfast |
| 2007-09 | Undergraduate student representative, Bangor University |
| 2007-09 | Founding committee, Bangor University Zoological Society |

SCIENCE COMMUNICATION

I am a strong supporter of science communication and outreach. I believe that it is important to encourage an interest in science and the natural world in people of all ages. Moreover, the success or failure of many modern conservation objectives increasingly require a connection with and understanding of the public. I have given talks to over 20 school, local interest, community and natural history groups in the UK, USA and Canada, in-person and via video calls.

***Contributions***

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| 2018 | UCC BEES Committee for Education and Public Engagement |
| 2017 | Sanger Institute 25 Genomes (*species champion – St. Kilda wren*) |
| 2017 | Culture Night, University College Cork |
| 2017 | A brief history of an Early Career Researcher, *Errant Science* |
| 2017 | Rejected by the Rainforest, *I F-ing Love Conservation* |
| 2017 | Science communication article, CBS (*#bestcarcass, contributor*) |
| 2017 | Rabaiotti D, Caruso N 2017. Quercus books, ISBN: 9781786488275 (*contributor*) |
| 2017 | Student Science Partnerships, USA |
| 2016-18 | Skype a Scientist (*5 calls to date*) |
| 2016 | Is there intelligent life on Earth? Save our Souls magazine(*author*) |
| 2016 | Letters to a Pre-scientist (*correspondent*) |
| 2015 | Nature News (*invited comment*) |
| 2015 | Dear Alice, the hare might be sane after all, *QUBio* |
| 2014-16 | Various Local Mammal Group newsletters (*invited author*) |
| 2014 | Created @Biotweeps, a science communication Twitter project (>14.5k followers) |
| 2014 | Multi-school careers advice and speed-networking event (*invited expert*) |
| 2013-18 | I'm a Scientist Get Me Out of Here! Enquiry Zone & Careers Zone |
| 2013 | Science outreach event, Techniquest, Cardiff (*presenter for RSPB*) |

MEDIA ENGAGEMENTS

***Radio and podcasts***

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| --- | --- |
| 2017 | BBC Coventry & Warwickshire, UK |
| 2017 | The Edgar Ortega Radio Show, North America (*podcast*) |
| 2016 | SciComm with Dr. Mike, UK (*podcast; 2 shows*) |
| 2015 | BBC Radio Ulster, Northern Ireland |
| 2015 | BBC Radio Ulster, *Good Morning Ulster*, UK |
| 2013 | RTE Radio 1, *Mooney Goes Wild*, UK |

***Television***

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| 2015 | Countryfile, BBC |
| 2013 | River Bann, RTE Television |

***Other research-related media***

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| 2017 | The Washington Post (*interview*) |
| 2016 | Biotechin.asia (*interview*) |
| 2016 | Camera traps reveal a hare-raising situation, *RSEC blog*, ZSL |
| 2016 | On closer inspection, it looks like a hare transplant, *QUBio* |
| 2015 | ScienceNews (*interview*) |
| 2015 | Communities and conservation in developing countries, *QUBio* |
| 2015 | Putting wildlife in the frame, *QUBio* |
| 2015 | BBC News (*interview and featured article*) |
| 2014 | Species profiles: Mountain hare and Irish hare, The Mammal Society |
| 2014 | A receding hare line and a brown toupee, *QUbio* |

SKILLS

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| Data analysis | R (packages include MuMIn, lme4, ggplot, remBoot, maptools, raster, SDMTools, StatMatch, pdist, glmmulti, metafor), SPSS, Minitab, Distance, MARK, ArcGIS, QGIS, MaxEnt, MAVIS NVC, Patch Analyst, GeneMapper, Microsoft office, GitHub, RMarkdown, graphics packages (e.g. Photoshop, Illustrator), bespoke software. |
| Statistical | General linear and mixed-effects models, Principal Components Analysis, Species Distribution Modelling, Discriminant Function Analysis, diversity indices, Mahalanobis and Euclidean distance, cross-correlation functions, model averaging, Random Encounter Models, meta-analysis, other parametric and non-parametric tests |
| Field | Off-road driving (4x4), multi-taxa (mammal, bird, invertebrate, reptile, amphibian; UK coastal, marine and terrestrial) surveys (e.g. mark and recapture, distance sampling, camera traps, quadrats, scan/focal sampling;) and identification, habitat surveys, animal handling (amphibians, reptiles, invertebrates, and small-to-large birds and mammals), orienteering |
| Laboratory | Multi-taxa dissection (mammal, bird, amphibian, invertebrate), species identification via microscopy, ethological studies, tissue sampling, DNA manipulation, electrophoresis, atomic absorption and colourimetric spectroscopy, specimen preparation, soil chemical and biological analysis. |
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REFEREES

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| --- | --- | --- |
| Prof. John O’Halloran | School of Biological Earth and Environmental Sciences, University College Cork, Distillery Field, N Mall, Ireland | |
|  | Email: [j.ohalloran@ucc.ie](mailto:j.ohalloran@ucc.ie) | Telephone: +353 (0)21 490 2407 |
| Dr. Sandra Irwin | School of Biological Earth and Environmental Sciences, University College Cork, Distillery Field, N Mall, Ireland | |
|  | Email: [s.irwin@ucc.ie](mailto:s.irwin@ucc.ie) | Telephone: +353 (0)21 490 4595 |
| Dr. Neil Reid | School of Biological Sciences, Medical Biology Centre, 97 Lisburn Road. Belfast BT9 7BL | |
|  | Email: [neil.reid@qub.ac.uk](mailto:neil.reid@qub.ac.uk) | Telephone: +44 (0)28 9097 2746 |
| Prof. Ian Montgomery | School of Biological Sciences, Medical Biology Centre, 97 Lisburn Road. Belfast BT9 7BL | |
|  | Email: [i.montgomery@qub.ac.uk](mailto:i.montgomery@qub.ac.uk) | Telephone: +44 (0)28 9097 2214 |