BETHANY R. SMITH

bethany.smith2019@my.ntu.ac.uk | BethRSmith_ | bethanyrsmith.com

EDUCATION

01/20 - present **PhD**, Nottingham Trent University (NTU) **-** "The ecological effects of livestock guarding dogs and potential implications for conservation"

Supervisors: Dr Antonio Uzal (NTU), Dr Richard Yarnell (NTU), Dr Katherine Whitehouse-Tedd, Dr Iain Trewby (Fauna & Flora International) & Professor Laurentiu Rozylowicz (University of Bucharest)

09/17 – 09/18 **MRes Ecology, Evolution & Conservation – Distinction,** Imperial College London

10/13 – 06/16 **BA Natural Sciences (Zoology)** – **First,** University of Cambridge

AWARDS & FUNDING

2021 **Best Student Poster -** Mammal Society 66th Spring Conference - "How might Livestock Guarding Dogs (LGDs) affect Wildlife?"

2019 **Christine Stevens Wildlife Award** ($15,000) - "Passive monitoring of wild wolves using acoustic detectors"

PUBLICATIONS

Smith, B.R., Yarnell, R.W., Uzal, A. and Whitehouse-Tedd, K. (2020). The ecological effects of livestock guarding dogs (LGDs) on target and non-target wildlife. *Journal of Vertebrate Biology*, 69(3), pp.1-17. https://doi.org/10.25225/jvb.20103

Mathews, F., **Smith, B.R.**, Harrower, C.A., Coomber, F.G. (2020). The State of Mammals in Wales. *A report by the Mammal Society for Natural Resources Wales, produced in association with Wales Mammal Biodiversity Action Forum*. The Mammal Society, London. ISBN: 978-0-9935673-6-0.

Finch, D., **Smith, B.R.**, Marshall, C., Coomber, F.G., Kubasiewicz, L.M., Anderson, M., Wright, P.G. and Mathews, F., 2020. Effects of Artificial Light at Night (ALAN) on European Hedgehog Activity at Supplementary Feeding Stations. Animals, 10(5), p.768. https://doi.org/10.3390/ani10050768

Crawley, D., Coomber, F., Kubasiewicz, L., Harrower, C., Evans, P., Waggitt, J., **Smith, B.R.** and Matthews, F. eds., 2020. Atlas of the Mammals of Great Britain and Northern Ireland. Pelagic Publishing Ltd.

Tanentzap, A.J. and **Smith, B.R**., 2018. Unintentional rewilding: lessons for trophic rewilding from other forms of species introductions. *Phil. Trans. R. Soc. B*, 373(1761), p.20170445. https://doi.org/10.1098/rstb.2017.0445

Smith, B.R., Aldridge, D.C. and Tanentzap, A.J., 2018. Mussels can both outweigh and interact with the effects of terrestrial to freshwater resource subsidies on littoral benthic communities. *Science of The Total Environment*, 622, pp.49-56. https://doi.org/10.1016/j.scitotenv.2017.11.318

CONFERENCES

1. **2021 Mammal Society 66th Spring Conference** (virtual) – on conference committee & poster presentation
2. **2020 BES Festival of Ecology** (virtual) – 15-minute oral presentation
3. **2019 Mammal Society 65th Spring Conference** (Glasgow, UK) – helped organise & attended
4. **2018 IENE Bats & Infrastructure Conference** (Stockholm, Sweden) – poster presentation
5. **2018 Mammal Society Autumn Symposium** (London, UK) – helped organise & attended
6. **2018 Frontiers in Ecology Evolution & Conservation Symposium** (Ascot, UK) – 10-minute oral presentation

RESEARCH & WORK EXPERIENCE

12/19 - present **Student Representative: Mammal Society**

- Created and maintain Student Research Hub on Mammal Society website.
- Co-ordinating and copy-editing Student Spotlight blogs.
- Co-ordinating the University Mammal Challenge.
- Member of Spring Conference Committee helping to organise this event each year and attract students. In 2021 the conference went virtual with almost 300 delegates attending, 137 of whom where students. I organised a separate Student Meet & Greet event the night before the conference that received excellent feedback.

12/19 – present **Passive acoustic monitoring of wild canids** *(Wisconsin, USA)*

- Deployed acoustic recorders (SM3 and SM4 devices) in woodland in central Wisconsin to monitor wolf and coyote movements via triangulation of howls.
- Currently helping to process the data in Raven to form a database of canid vocalisations that can be used to answer questions regarding dog-coyote-wolf vocal interactions, amongst other interesting research questions.

10/18 – 12/19 **Data & Information Officer: Mammal Society** (*Brighton, UK*)

- Coded large sections (RMarkdown and Shiny) of Ecobat, the society's web tool for automated bat activity analysis.
- Co-ordinated several UK-wide projects including the use of the Mammal Mapper app, standardised small mammal trapping to estimate population densities, and a citizen science project to survey waterways for mammals.

04/18 – 10/18 **Temporal responses of brown bears to human activity** (*Master's - Distinction, 79%)*

- Managed >500,000 camera trap photos to investigate the temporal responses of brown bears to tourists in the Plitvice Lakes National Park, Croatia.
- Gained experience in setting and checking bear and lynx traps and in radio-tracking of GPS-collared individuals from the ground and from a plane.
- *Supervisors: Professor Josip Kusak (University of Zagreb) & Dr Marcus Rowcliffe (IoZ, ZSL).*

11/17 – 04/18 **eDNA for water voles and American Mink** *(Master's – Distinction, 74%)*

- Designed primers and probes for qPCR using the NCBI database and Geneious.
- Collected and extracted DNA from animal tissue and water samples then performed PCRs to check designed primers and qPCR to determine amplification of target species.
- *Supervisor: Professor Vincent Savolainen (Imperial College London).*

06/17 – 09/17 **Research Intern: Ives Lab, University of Wisconsin-Madison** *(Mývatn, Iceland)*

- Responsible for sampling at the main site on the lake taking sediment cores and water samples. Helped sample the terrestrial food web with sticky cards and infall traps for adult midges and pitfall traps for arthropods.
- Processed the samples in the laboratory: midge larvae, zooplankton and terrestrial arthropod identification, and chlorophyll extraction and analysis.
- *Supervisor: Professor Tony Ives (University of Wisconsin-Madison)*

11/16 – 12/16 **Research Intern: Lupus Laetus** *(Lieksa, Finland)*

- Tracked large carnivores in the snow for up 10-15km per day; plotted data in QGIS.
- Collected and processed wolf and lynx scats.

09/16 – 11/16 **Research Intern: Sea Watch Foundation** *(New Quay, Wales)*

- Developed strong observational skills conducting surveys of marine mammals and photo-identification of bottlenose dolphins.
- Delivered presentations during boat tours to raise awareness of cetacean behaviour, ecology and conservation.

07/15 – 02/17 **Freshwater Mussels as Ecosystem Engineers** (*Undergraduate Research Project – First, 70%)*

- Placed freshwater mussels into sediments of different organic matter percentages and recorded the changes in sediment chemistry (pH, dissolved organic carbon, nitrogen and phosphorus), benthic algae, zooplankton communities and mussel growth.
- *Supervisors: Dr Andrew Tanentzap & Dr David Aldridge (University of Cambridge).*

10/15 – 12/16 **Chorus Howling in Wolves** *(Voluntary project - University of Cambridge)*

- Collected and analysed acoustic data from captive wolves to investigate the characteristics of howls from different subspecies of wolves. Used 'Raven' to analyse the recordings.
- *Supervisors: Dr Arik Kershenbaum (University of Cambridge), Dr Holly Root-Gutteridge (University of Sussex) & Vicente Palacios (University of Valencia).*

06/16 – 08/16 & 07/15 – 09/15 **Field Assistant: Tanentzap Lab, University of Cambridge** *(Sudbury, Canada)*

- Joined a small team based at the Vale Living with Lakes Centre to set up and routinely sample mesocosms in three different lakes as part of a large-scale restoration project.
- Took samples of water, sediment, macroinvertebrates, phytoplankton and zooplankton and then ran analyses in the laboratory using specialist equipment (e.g. TOC analyser, gas chromatograph, HACH spectrophotometer).

10/14 – 05/15 **Behavioural Ecology of Sticklebacks** (*Undergraduate Research Project – First, 81%)*

- Tested our theory that bolder individuals, who spend more time out of cover, would use their spines more as an evolutionary behavioural response to increased predation risk.
- Fish movement was tracked using a Raspberry Pi and the software 'AnTracks'. All data analysis was conducted in R.
- *Supervisor: Dr Jolle Jolles (Max Planck Institute for Ornithology).*

POSITIONS OF RESPONSIBILITY

09/17 – 09/18 **Student Representative: MRes Ecology, Evolution & Conservation** (Imperial College London)
Collected opinions of students on the course and presented constructive feedback in meetings throughout the year, whilst working with the course organiser to organise events e.g. careers workshops, analysis help sessions and presentation practice sessions.

09/17 – 09/18 **President & Founder: Silwood Park Mammal Society** (Imperial College London)
Lead the winning team of The Mammal Society's 2018 University Mammal Challenge, during which I organised a campus-wide camera trapping survey, and several events (mammal ID workshop, small mammal trapping, and footprint tunnels with our local charity, Wildlife in Ascot).

10/15 – 06/16 **President and Founder: Cambridge University Ecology Education Society**
Successfully managed a team of students to create and deliver ecology workshops in Cambridge primary schools. We were able to deliver the workshop five times and, on each occasion, received amazing feedback from both teachers and pupils.

SKILLS

IT:	**MS Office Packages**, **R** including **RMarkdown** and **Shiny** (data analysis and automated code), **Raven** (bioacoustics), **Camelot** (camera trap data management), **QGIS** (spatial data).
Driving:	Full, clean UK driving license; off-road driving; driving in snow; rides trials motorbikes.
First Aid:	Level 2 Emergency First Aid at Work & Outdoor (19/03/2018 – 19/03/2021)