

PhD Studentship: Untangling the roles of prey availability, habitat quality and predation as predictors of hedgehog abundance

Key academic contact: Dr Richard Yarnell, School of Animal, Rural and Environmental Sciences (ARES).

The studentship is funded by Nottingham Trent University and the People's Trust for Endangered Species. Supervision will be led by Dr. Richard Yarnell, School of Animal Rural and Environmental Sciences (NTU Brackenhurst Campus), in conjunction with Professor Dez Delahay (Animal and Plant Health Agency) and Dr Phil Baker (University of Reading).

The project:

Increasing badger numbers have been implicated in the decline of hedgehogs in the UK, although it is unknown whether direct predation or increased competition for food explains this negative relationship. This project will therefore attempt to untangle the relationships between food availability, habitat and the density of badgers on hedgehog abundance in an agricultural landscape. By comparing key ecological and environmental factors such as hedgerow complexity, food abundance and land use across multiple areas of differing hedgehog and badger abundance, the project will attempt to identify which factors can predict co-existence. Data collection will take place at 30 sites across England where badgers and hedgehogs are present, and will involve habitat mapping via GIS, density estimation using camera traps, quantifying prey availability via standard invertebrate sampling techniques and compare badger and hedgehog diet through molecular scatology. The project will also aim to identify and evidence prescriptions within agri-environment schemes that are likely to support hedgehogs in the presence of badgers by testing the hypothesis that badgers and hedgehogs are spatially separated in the rural landscape due to differential foraging preferences. This will provide evidence to determine whether the negative relationships observed between the species are linked to differing levels of food availability in the wider landscape rather than predation risk *per se*.

Person specification:

We are seeking a student with a strong background in ecology, conservation science or related disciplines, i.e. a student with a good undergraduate degree (First class honours degree) and preferably a good Master's degree (commendation/merit or distinction).

The project would particularly suit someone who has experience of ecological fieldwork, a keen interest in predator prey dynamics, and who wants to apply their knowledge to real-world situations. Strong statistical skills are also desirable. You will work closely with farmers and conservation groups, and engage with landowners, so good communication skills are essential. The student must be ready to start in October 2017.

In addition, the following skills would be desirable:

1. Previous experience of peer reviewed publication
2. GIS
3. Statistical modelling using R
4. Extensive field work experience
5. A driving licence

The School of ARES:

Nottingham Trent University has an outstanding reputation for our commitment to research that shapes lives and society. The School of Animal, Rural and Environmental Sciences is located at the NTU Brackenhurst Campus. It has a growing postgraduate community which benefits from the support of the NTU Doctoral School in addition to the subject specialist expertise within the School.

Further information regarding research within the School can be found at:

<https://www.ntu.ac.uk/research/research-at-ntu/academic-schools/research-at-the-school-of-animal-rural-and-environmental-sciences>