

Four PhD positions in bird behavioural ecology are available at the University of East Anglia (UEA) in Norwich, UK

1. position

Mechanisms driving changes in migratory behaviour of long lived birds in response to global environmental change (FRANCO_UENV15EE): Norwich, United Kingdom

Shortlisted applicants will be invited to an interview day on either Thursday 12 or Friday 13 February 2015. Funding: This project has been shortlisted for funding from the EnvEast NERC Doctoral Training Partnership. Successful candidates who meet RCUK's eligibility criteria will be awarded a NERC studentship. In most cases, UK and EU nationals who have been resident in the UK for 3 years are eligible for a full award. The stipend for 2014/15 was £13,863 p.a. For further information, please see www.enveast.ac.uk

Description

Background: The migratory patterns of animals are changing in response to global environmental change. Previously wholly migratory species wintering in Sub-Saharan Africa now have resident populations in Southern Europe. The causes of these changes are not fully established but both climate change and increased winter food availability have been proposed as possible factors. This project will use white storks as the study system because they are a long-lived species likely to have adaptable behaviour because they experience variation in environmental conditions through their lives. This project has a new experimental design taking advantage of state-of-the-art loggers and the closure of land fill sites and has the potential to unravel some of the mechanisms underlying bird migratory behaviour and to be relevant for conservation and to the general public. Objectives: - Identify the (heritable) determinant of migratory behaviour in storks; - Determine individual determinants of migratory behaviour; - Determine the demographic consequences of migration and residency; - Determine the population consequences of demographic changes in migrants and residents in response to future environmental changes; Methods: This project will use high performance GPS/GSM tags to monitor the movement and behaviour of adult white storks and their offspring, 50 new loggers will be deployed. This project is built on a long lasting interaction between researchers based at UEA, University of Lisbon, BTO and a field team in Portugal. It will take advantage of the

existing databases, expertise in data analyses and field techniques. The student will join an active, NERC-funded research environment, in which the supervisors focus on studying how global environmental change affects species distributions and the mechanisms underlying different migratory strategies and changes in migratory behavior. References Both C, et al. (2010) Avian population consequences of climate change are most severe for long-distance migrants in seasonal habitats. *Proceedings of the Royal Society B-Biological Sciences* 277: 1259-1266. Catry I, et al. (2011) Individual variation in migratory movements and winter behaviour of Iberian Lesser Kestrels *Falco naumanni* revealed by geolocators. *Ibis* 153: 154-164. Gordo O, et al. (2005) Do changes in climate patterns in wintering areas affect the timing of the spring arrival of trans-Saharan migrant birds? *Global Change Biology* 11: 12-21.

2. position

Consequences of juvenile settlement decisions in migratory birds during winter (GILL_UBIO15EE): Norwich, United Kingdom

Shortlisted applicants will be invited to an interview day on either Thursday 12 or Friday 13 February 2015. This project has been shortlisted for funding from the EnvEast NERC Doctoral Training Partnership. Successful candidates who meet RCUK's eligibility criteria will be awarded a NERC studentship. In most cases, UK and EU nationals who have been resident in the UK for 3 years are eligible for a full award. The stipend for 2014/15 was £13,863 p.a. For further information, please visit www.enveast.ac.uk.

Description

Scientific background Many migratory bird populations are currently changing rapidly in size and distribution, but the causes of these changes are unknown. Birds are generally considered to be highly mobile and thus able to disperse when environmental conditions change. However, in most species, individuals are highly site-faithful, including migratory species in which individuals travel thousands of miles annually, but typically return to the same summer and winter locations as adults. This means that the settlement decisions of juveniles are likely to be a major driver of changes in distribution in migratory species, but virtually nothing is known about how juveniles

make these settlement decisions or how those decisions influence their subsequent fitness. Study system Icelandic black-tailed godwits have been the subject of a long-term (~20 year) study in which large numbers of individuals are individually marked and tracked on their migratory journeys between Iceland and Western Europe. This population has also expanded over the last century and, in order to understand this range expansion, we need to quantify the drivers of juvenile site selection and the consequences for their fitness. Research plan & training This study will focus on recently colonised winter locations for Icelandic godwits in the UK and Portugal, and will explore patterns of adult and juvenile arrival in autumn, and their subsequent distribution, habitat use and foraging behaviour on estuarine mudflats and wet grasslands, in order to quantify the processes influencing juvenile site selection and the energetic and fitness consequences of these choices. Students will receive training in a broad range of field and analytic techniques, including marking and tracking individuals, survival analyses and modeling of behavioural responses to environmental conditions, and will have the opportunity to work on this system in the UK, Portugal and Iceland through collaborations with co-supervisors in these countries. Experience of fieldwork with avian systems will be advantageous.

3. position

The effects of wading birds on intertidal mudflats: sediment dynamics, biogeochemical properties and ecosystem services. (TOLHURST_UENV15EE): Norwich, United Kingdom

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Description

This project will investigate how wading birds mediate processes on intertidal mudflats to deliver

ecosystem services; specifically effects on sediment stability, nutrient flux and productivity. Intertidal mudflats provide numerous ecosystem services, support a diverse biota and are one of the planets most imperilled ecosystems, disappearing faster than tropical rainforest. Previous studies have highlighted how wading birds alter processes such as biostabilisation of sediments, but our understanding remains poor. Improving our knowledge of how birds mediate processes is vital for predicting and mitigating the effects of climate change on these important habitats. Research methodology Field studies provide the best information for understanding mudflat processes. You will design manipulative field experiments to alter the numbers and species diversity of wading birds in plots on intertidal sediments. You will monitor these plots using non-invasive techniques and take sediment samples for analysis of biogeochemical properties in the laboratory. You will analyse these data to determine the effects of wading birds on ecosystem services. Training Training will be provided in multidisciplinary science, experimental design, multivariate analysis, statistics and techniques including: PAM fluorometry, erosion devices (FloWave, Cohesive Strength Meter), cryogenic sediment coring (contact core) and biogeochemical analysis (grain size, organic matter, pigments, nutrients). You will spend part of the year working with Professor Graham Underwood, Essex University, training in nutrient flux measurements, exopolymer analysis and microalgal productivity. A yearly placement with the National Trust (Blakeney Nature Reserve), will provide experience in coastal management. Person specification: This highly multidisciplinary project requires a background in one or more of: sedimentology, ecology, marine biology, biogeochemistry, environmental science. You need good laboratory based analysis skills. Ability to identify benthic macrofauna would be advantageous. Work will be done in challenging muddy coastal environments, so you must be able to demonstrate excellent field skills.

4. position

Investigating the evolutionary forces underlying promiscuity in the Seychelles warbler (RICHARDSONS_U15SF): Norwich, United Kingdom

This PhD project is offered on a self-funding basis. It is open to applicants with funding or those applying to funding sources. Details of tuition fees can be found at <http://www.uea.ac.uk/pgresearch/pgrfees>. A bench fee is also payable on top of the tuition fee to cover specialist equipment or laboratory costs required for the research. The amount charged annually will vary considerably depending on the nature of the project and applicants should contact the primary supervisor for further information about the fee associated with the project.

Description

Promiscuity is common, even in supposedly monogamous species, yet the evolutionary forces acting on this behaviour are rarely quantified. This is important as promiscuity has widespread effects on key factors such as reproductive skew, gene flow and sexual selection. Studies are required to investigate the causes and consequences of individual variation in promiscuity to improve our understanding of why this is maintained. In most wild populations it is almost impossible to quantify the evolutionary dynamics of promiscuity accurately. Fortunately, because the Seychelles warbler population we study is confined to a small isolated island we can track individuals from birth to death and accurately determine survival and reproductive success. These measures, combined with the high rate of extra-pair paternity (EPP; 40%) in a species that can live to 17-years and undergoes senescence, provide an exceptional opportunity to investigate individual variation in EPP and the associated costs and benefits. Furthermore, data from our long-term study shows that territory quality and local densities have varied over time in this population, altering the opportunities for EPP. The PhD will determine individual variation in EPP and correlate this with socio-ecological effects as well as age, health and other individual-specific parameters. They will then disentangle the genetic and environmental components of EPP variation using the Seychelles warbler pedigree and quantitative genetic techniques. This will provide novel insight into how both genes and environment influence the evolution of behaviour in natural systems. The student (based at UEA) will work within the Seychelles Warbler Project, a collaboration between evolutionary ecologists at UEA (UK), Groningen (NL) and Sheffield (UK), and undertake fieldwork in the Seychelles. They will be supervised primarily by Prof. DS Richardson and Dr H Dugdale, and trained in field work, evolutionary theory, experimental design, statistics, quantitative genetics and molecular techniques, though candidates with experience will be preferred.

Additional Job Details

<https://www.uea.ac.uk/biological-sciences>