PhD position on the project 'The evolutionary causes and consequences of human commensalism'

Category: Position
Function: PhD Student
Department: Animal Ecology
Contact: Melissah Rowe
Closing date: Sunday 5 September 2021

The Netherlands Institute of Ecology (NIOO-KNAW) is a top research institute of the Royal Netherlands Academy of Arts and Sciences (KNAW). NIOO-KNAW focuses on fundamental and strategic research on individual organisms, populations, communities, and ecosystems.

The Department of Animal Ecology offers a PhD position on the project

"The evolutionary causes and consequences of human commensalism"

Vacancy number PhD-AnE-2116

It is becoming exceedingly clear that humans have, and still are, drastically altering the planet. Although human activity typically has a negative effect on biodiversity, some species have rapidly adapted to novel niches opened up by human activity. These anthrodependent taxa differ from domestic species; they depend on human resources but have evolved without our direct interference. Such species thrive in our vicinity and are well known to us, e.g. they are the birds we see in our gardens. Yet, despite our familiarity with human-commensal species, our understanding of the evolution of anthrodependency and its consequences are lacking.

The house sparrow (Passer domesticus) is a successful human commensal that thrives in human created niches. It has adapted to urban and agricultural habitats on every continent
except Antarctica. Intriguingly, a number of other Passer sparrows are also human commensals having likely experienced similar selective pressures. The overarching aim of the project is to determine the evolutionary causes and consequences of human commensalism in European Passer sparrows and we will achieve this by addressing a set of key questions: Has anthropodependency arisen just once and spread via introgressive hybridization, or has it evolved in parallel in Passer sparrow species and subspecies? Are similar genes and phenotypes involved in independent adaptation to a human niche? What are the consequences of human commensalism for morphology, physiology, and behaviour and species interactions?

The PhD project

The PhD student will conduct research aimed at understanding the evolutionary consequences of human commensalism and how it might drive divergence in phenotype, physiology, diet, and gut microbiomes, as well as the potential for reproductive isolation, between commensal and non-commensal Passer sparrow populations. To achieve these aims, we will compare commensal and non-commensal populations and (i) quantify variation in skull and bill morphology, (ii) test for dietary shifts towards anthropogenic food sources, (iii) measure variation in bite force capacity, (iv) quantify gut microbiome compositional and functional diversity, (v) quantify behaviour, (vi) assess immune function, and (vii) examine variation in reproductive behaviour and biology (e.g., breeding sites, sperm function). We will also use cline analysis to investigate the potential for selection and reproductive isolation between commensal and non-commensal lineages. The PhD project will involve both fieldwork and work in the laboratory, and will include behavioural, immunological, and reproductive assays, genomic analysis and bioinformatics.

Research and Project group

The PhD student will be embedded in the Rowe Group at the Netherlands Institute of Ecology (NIOO-KNAW), located in Wageningen, The Netherlands. The PhD project is part of a collaboration with Dr. Mark Ravinet (University of Nottingham, UK) and Professor Glenn-Peter Sætre (University of Oslo, Norway), and thus it is anticipated that the successful applicant will spend some time at both institutions during the project period.

Training

The student will receive training in a broad range of core biological skills ranging from experimental design and molecular laboratory techniques to statistical analysis and bioinformatics.

Skills and Competences

The successful candidate should have a master's degree, and a strong background in evolutionary biology and experience in molecular laboratory techniques and fieldwork. Students with experience of bioinformatics are strongly encouraged to apply. Successful candidates must speak fluent English, as this is the working language of the project group. As the PhD student will interact with many organizations, good communication skills are essential.
Appointment

This is a temporary appointment, initially for 1 year and upon satisfaction to be prolonged for a maximum of 4 years (1.0 fte). Starting date: October 2021 (some flexibility available). The PhD position is for four years.

Salary

The gross salary starts at € 2,395 per month in the 1st year, and will gradually increase to a maximum of € 3,061 per month in the 4th year, scale P, Collective Agreement for Dutch Universities (CAO Nederlandse Universiteiten), excluding 8% holiday pay and a 8,3% year-end bonus.

Location

The Netherlands Institute of Ecology, NIOO-KNAW in Wageningen, The Netherlands.

Information

For more information, please contact Dr. Melissah Rowe (M.Rowe@nioo.knaw.nl). Information on the Netherlands Institute of Ecology (NIOO) can be found at the website: http://www.nioo.knaw.nl/

Applications

The application, in English, must be submitted electronically via Academic Transfer (Apply Now button). Please include a cover letter summarising motivation and experience, a CV, and 1-3 professional referees (name, address, telephone & email). Deadline for applications is 5 September, 2021. Applications received later than this date will not be considered.

Diversity & Inclusion

Everybody is different. Fortunately, as this makes working together more delightful and often leads to better end results. The KNAW believes in a working environment in which everyone feels welcome and appreciated. A working environment in which attention is paid to individual quality and where development opportunities are paramount. Together we strive for an inclusive culture in which we embrace differences. We would like to get in touch with candidates who can contribute to this culture thanks to their background and experience.