

## SOCIALBORN

### ENVIRONMENTAL DRIVERS OF SOCIAL PLASTICITY IN WILD BIRDS

**Supervisors:** Dr. Judith Morales (National Museum of Natural Sciences – CSIC, Spain) and Dr. Wendt Müller (University of Antwerp, Belgium)



Social interactions are a ubiquitous component of (our) life, but how do newborn animals develop adaptive, cost-effective and adequate social behaviours? How important are early life experiences, e.g. with siblings and parents, to shape sociability? Do mothers prepare their offspring for the social environment they might encounter via maternal effects they deposit in their eggs (e.g. hormones)?

To answer these questions, you will study social behaviour in a wild bird species, the blue tit. Among other, you will do fieldwork during spring in the forests of Miraflores de la Sierra (Madrid). Here, you will perform complex field experiments involving e.g. cross-fostering, growth measurements, catching and ringing adults, and behavioural tests (video observations). You will combine this with molecular and physiological analyses in the lab.

#### THE FORMATIVE ENVIRONMENT

You will be based at the **National Museum of Natural Sciences-CSIC**, in Madrid. The Museum is a multidisciplinary research centre, renowned for its integrative approach and complex natural history studies. At the Museum, you will join the Social Evolution Unit (part of the Department of Evolutionary Ecology), a dynamic and highly collaborative research team led by Judith Morales. For more information about the research unit and our ongoing projects please visit our website: <https://judith-morales.com/>. The thesis will be co-supervised by Wendt Müller, who leads the Family Ecology Unit at the University of Antwerp (Belgium) (for more details, please see <https://www.uantwerpen.be/en/staff/wendt-muller/>). Thus, the student will have the opportunity to visit and stay at the University of Antwerp.

## **YOUR PROFILE**

We seek an enthusiastic PhD candidate with a keen interest in animal behaviour and evolutionary biology, and motivation to do fieldwork with wild birds. The research is highly collaborative and you will need good communication and interpersonal skills. A good English level is also required. Previous experience in related research and fieldwork would be helpful.

## **HOW TO**

Please, send a short letter of motivation and your CV in English or in Spanish to [jmorales@mncn.csic.es](mailto:jmorales@mncn.csic.es)

If you have any doubt, do not hesitate to ask.

## **THE PROJECT *SOCIALBORN***

The thesis will be performed within the framework of the *SOCIALBORN* project (reference: PID2022-139166NB-I00: IP: Judith Morales), and entitled "*Social phenotype plasticity: maternal effects, early-life environment, and the development of individuality in social traits*"

### **AIM, RELEVANCE AND IMPACT**

Social interactions are a ubiquitous component of (our) life, and in fact, a lack of social interactions is a significant driver for aging and morbidity in humans and other vertebrates. Evolution has thus made organisms very adequate in dealing with their inherently social life, but we know rather little about the behavioural mechanisms underlying this ability. The objectives of this project are hence to advance our knowledge on this fundamental question by following an integrative approach that explores the development of adaptive social behaviour and how it is shaped by social experiences early in life. Given that behavioural individuality is a fundamental characteristic of animal populations, the project will start at the individual level, with possibilities for upscaling to social networks and the community level. For this, we will incorporate approaches from complex network theory and apply state-of-the-art epigenetic and physiological approaches. The results of the project may become relevant for the social sciences and medical research, as they may ultimately provide a better understanding of maladaptive social behaviour (= disorders) in humans. Furthermore, the project will allow generating predictions about the adaptations to environmental changes of anthropogenic origin, and, in general, to any change that has effects on social density.

**ETHICAL STATEMENT:** The project aims to delve into the evolution of social behaviour in animals, so it does involve working with wild animals. However, we will take care of animal welfare throughout the project. All the procedures have been approved by the Ethics Committees for experimentation at the National Museum of Natural Sciences, CSIC and the Community of Madrid, and were categorized as minimal.