

Master Thesis Research Opportunity: Diet Divergence in Island Endemic Birds of São Tomé

Are you enthusiastic about island ecosystems, species interactions, and evolutionary biology? Join our exciting project exploring diet divergence in São Tomé's endemic birds!

Why island birds?

Islands are unique environments characterized by limited resources, fostering distinctive adaptations in species. This often leads to a broader diet range and reduced interspecies competition compared to the mainland, but increased intraspecific competition (Blondel 2000, Grant 1965, Sfenthourakis & Triantis 2009, Schoener 2010). Our focus is to understand how these pressures influence diet specialization between males and females, which may result in sexual dimorphism (Ebenman & Nilsson 1982, O'Connell et al. 2019).

What will you investigate?

In this master's project we aim to compare the diet of females and males of several endemic birds from São Tomé and answer:

1. Do males and females exploit different food sources?
2. Generalist vs. Specialist Species: Which types of species show greater diet divergence between sexes?
3. How does diet niche variation relate to morphological traits like bill shape?

What will you do?

1. Conduct DNA metabarcoding from previously collected faeces and blood samples.
2. Use genetic data to identify diet composition and determine the sex of monomorphic species.
3. Use bioinformatics to analyse diet breadth and niche differences between sexes.
4. Correlate diet data with morphological characteristics.
5. Fieldwork: Depending on timing and student motivation, an expedition to São Tomé may be possible for additional sample collection.

More information

The work will primarily be done at the CIBIO-Biopolis, Vairão, Vila do Conde, Portugal. Working periods in partner Research Institutions may take place.

Duration of the project: 6 months (can be extended depending on the master's programme)

Expected starting date is early 2025 (February or March). This position is not paid but there is a possibility to apply for funding (Erasmus Mundus, etc).

Who should apply?

We are seeking an enthusiastic, motivated student interested in evolutionary biology, ecology, and bioinformatics. Lab and field experience is a plus, but passion and a willingness to learn are essential.

Interested candidates should provide: (1) a motivation letter with a statement of research interests, skills and experience relevant to the position, (2) a CV, (3) contact details of two referees, (4) copies of previous degrees transcripts.

Join Us!

This is a great opportunity to contribute to cutting-edge research in island ecology and evolution. You can check more about our work at www.islandbirdproject.com

The application call is open between 21/10/2024 and 1/12/2024.

Candidatures or informal queries should be emailed to Raquel Ponti raquelponi@gmail.com, and Ana Leitão anamvleitao@gmail.com.

References:

Sfenthourakis & Triantis (2009). Habitat diversity, ecological requirements of species and the Small Island Effect. *Divers. Distrib.*, 15, 131-140.

Schoener (2010). *The MacArthur-Wilson Equilibrium Model. The theory of island biogeography revisited*, 52-87.

Blondel (2000). Evolution and ecology of birds on islands: trends and prospects. *Vie et Mil./Life & Env.*, 205-220.

Grant (1965). The adaptative significance of some size trends in island birds. *Evolution*, 355-367.

Ebenman & Nilsson (1982). Components of niche width in a territorial bird species: habitat utilization in males and females of the chaffinch (*Fringilla coelebs*) on islands and mainland. *Am. Nat.*, 119, 331-344.

O'Connell, et al. (2019). Increased sexual dimorphism in dense populations of Olive-backed Sunbirds on small islands: morphological niche contraction in females but not males. *Emu* 119, 296-307.