

## HO13 Niche partitioning and characterization of Anolis lizards in the tropical cloud forest of Honduras

George Lonsdale, Tom Brown and Tom Martin - Operation Wallacea

Anolis lizards are the most diverse tetrapod clade on the planet, with over 400 species occurring in the neotropics (and parts of the Nearctic), and are a classic example of radiative evolution. However, despite being charismatic and well known, having been the focus of many pure evolutionary studies, the natural history of many Anole species is highly understudied, especially in poorly-researched ecosystems such as Mesoamerican cloud forest. Cusuco National Park (CNP) supports 13 distinct species of Anole lizards, four of which are endemic to Honduras and some of which are micro-endemics found only within Cusuco or Cusuco and a handful of other sites (e.g. *Norops cusuco*). To exist in such diversity side-by-side, these sympatric species must find means to avoid both inter- and intra-specific competition. However, the exact mechanisms of how they achieve this are unknown. They may do this by partitioning their niches with regards to their diurnal active locations and their nocturnal sleeping sites, or there may be other mechanisms involved. This project aims to determine the degree of habitat specificity in the Anoles of Cusuco National Park, principally investigating how their niches are separated in terms of their diurnal active locations and nocturnal sleeping sites.

Students taking this option will join herpetofauna sweep transect surveys, completed both in the day and at night, and will conduct visual encounter surveys for the most common species of Anole lizards using the pre-established network of transects in CNP. These transects span a wide variety of habitat types, altitudinal bands, and disturbance levels. When encountering individuals anoles on these transects, data will be collected on morphology (body size, condition, sex, etc.), behaviour (activity, orientation, etc.) and micro-habitat use (i.e. height above ground, perch substrate, dimensions, etc.). Precise data will also be sourced on the characteristics of anoles found at night on sleeping perches (height of perch, broad tree type of perch, number of lizards on perch, etc). The collection of such data will allow conclusions to be drawn on species interactions, behaviour, ecology and niche preference. This will allow students to form an understanding of how these synoptic species avoid competition in nature, as well as generating novel natural history information on these poorly-studied species.

**Suggested reading:**

Losos JB, Leal M, Glor RE, de Queiroz K, Hertz PE, Schettino LR, Lara AC, Jackman TR & Larson A. (2003) Niche lability in the evolution of a Caribbean lizard community. *Nature* **424**: 542-545.

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Rummel JD. & Roughgarden, J. (1985) Effects of Reduced Perch-Height Separation on Competition between Two Anolis Lizards. *Ecology* **66**: 430-444.

Schoener, T.W. (1968) The Anolis Lizards of Bimini: Resource Partitioning in a Complex Fauna *Ecology* **49**: 704-726.

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