

Divergence of mate recognition systems and adaptive phenotypic traits in response to recent anthropogenic habitat changes in an oceanic island (São Tomé) endemic passerine (*Speirops lugubris*)

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Adaptation of communication systems to local environments predicts that when environments differ ecologically, divergences in communication systems will occur. This, in turn, may lead to the evolution of pre-mating barriers, which have been thought to be one of the most important mechanisms in reproductive isolation. Global anthropogenic environmental change is therefore expected to affect signal evolution. We examined the effects of recent anthropogenic change in the divergence of some phenotypic patterns of *Speirops lugubris*, an endemic passerine of Sao Tome Island. Data on plumage colorimetrics, song and morphology were collected from individuals on both primary forest and shade forest plantations, a habitat less than 200 years old. Results showed no plumage colour differences between habitats; however those in shade forest plantations were significantly smaller than birds in undisturbed forest. Song structure diversity was high, with very few song types shared between individuals. Nevertheless, the physical properties of the songs related to vegetation structure characteristics that differed between habitats. This observed change in a small island population suggests that mate recognition signals, a fundamental trait for fitness, are able to respond quickly to habitat changes.