

Abstract

The Eastern Afromontane biodiversity hotspot consists of isolated mountain massifs embedded within the dry lowland savannas of East Africa and of which the peaks and ridges are covered by cloud forest remnants. These cloud forests are home to the Mountain White-eye (*Zosterops poliogaster*), while three congeneric species (Abyssinian White-eye, *Zosterops abyssinicus*; Yellow White-eye, *Zosterops senegalensis*; Pemba White-eye, *Zosterops vaughani*) inhabit the adjacent lowland savannas. We sampled individuals of all four species across Kenya to analyse interspecific genetic relationships as well as intraspecific differentiation among mountain populations of *Z. poliogaster*. While the level of genetic differentiation among the four species was rather low, genetic differentiation within *Z. poliogaster* was very high, even between geographically neighbouring populations. Overall, levels of genetic variation varied strongly across all four species, with much higher diversity detected within the three lowland ones. The highland species was characterised by numerous private alleles that were geographically restricted at populations from single mountains, some of which showed evidence of recent population bottlenecks. We conclude that *Z. poliogaster* populations are both of high conservation value and conservation concern, given the high proportion of endemic alleles and the genetic signatures of high genetic drift and low gene flow that are typical for small and isolated populations.