Effects of personality and parasites on song expression in translocated North Island Tieke

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Translocations are an effective conservation tool for managing threatened and endangered New Zealand (NZ) birds. However, we still do not understand the effect of such management in the selection of traits that will become the basis for the evolution of the translocated species. The North Island (NI) Tieke or Saddleback (*Philesturnus carunculatus rufusater*) is arguably NZ's most successfully translocated species. From previous studies, we have learnt that these serial translocations have resulted in cultural bottlenecks with reduction of song variability. We have also discovered that tieke is an exceptional carrier of endemic and introduced avian malaria caused by *Plasmodium* spp., with seroprevalence between 10- 40% at different translocation sites. Parasites are crucial to the evolution of their hosts and the costs of parasitism are known to affect natural and sexual selected traits including song. Studies of other bird species have shown relationships between personality and parasites and survival, and between parasites and song characteristics in wild bird populations.

The aim of this study is to investigate how parasites affect song structure and singing performance in a translocated population of tieke (Bushy Park Sanctuary) with a high *Plasmodium* seroprevalence (39%). Songs are essential for conspecific recognition and mate choice and, their frequency and complexity can be affected by an individual's health. Translocations often result in selection of personality types that provide survival advantages at a given translocation site. For example, individuals with shy personality may survive better when translocated to a site with predators as they are not likely to take risks or be noticed. This project provides an opportunity to examine whether tieke show different personalities in a translocated population, and if there exist a relationship between these and parasitic infection and/or complexity of song.

The funding provided by BirdsNZ has been essential to carry out field trips to catch, band, assess personality and blood sample tieke. In addition, thanks to these funds we are currently recording the songs from the birds previously captured, and we will be able to perform the necessary genetic analyses to detect the parasites in the blood samples. In the long term the information generated by this study will contribute to understand the effects of translocation on the relationship between personality-parasites, personality-song, and song-parasites, which have been described as important for the survival and reproductive success of birds in general.