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An Experimental Approach to the Translocation of the North Island Saddleback (*Philesturnus carunculatus rufusater*) to Bushy Park Reserve, Wanganui



North Island Saddleback. Photo: Joanne Thorne

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Joanne Maree Thorne
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ABSTRACT

Translocation, the intentional release of a species into a new location, is a key technique used in the conservation of New Zealand's threatened species. Despite the frequency with which translocations are carried out, factors affecting their outcome are not fully understood and greater emphasis on research based approaches is required for improvement. The translocation of North Island saddlebacks (*Philesturnus carunculatus rufusater*), an endangered forest passerine, from Mokoia Island, Lake Rotorua, to predator fenced reserve Bushy Park, Wanganui provided the opportunity to investigate some key aspects that were identified *a priori* as factors that may affect its outcome. A greater understanding of these factors may increase the success of future saddleback translocations to the mainland.

The enforcement of complex disease screening programmes during translocation is a routine part of New Zealand translocations, yet the impacts these procedures have on post release survival is unknown. The saddleback translocation was designed to experimentally test these impacts by comparing the post release survival of four treatment groups that underwent different regimes of quarantine and prophylactic disease treatment (used to prevent stress induced disease) as part of a standard disease screening programme. However the detection of a *Plasmodium* in four of the translocated saddlebacks required a change in the original experimental design and subsequent comparison of post release survival between groups was difficult due to confounding factors. Despite this, the disease screening process resulted in difficulties in identifying which diseases were of concern, inaccurate diagnostic tests, increased cost, mortality during captivity and poor post release survival. These factors served to highlight some serious downfalls in the current 'guess work' approach applied to regulating disease risk during translocations and alternative approaches are discussed.

Population Viability Analysis (PVA) indicated that the population had 0% probability of extinction within the next five years. The model was based on data collected during the first year after release and therefore had a high degree of uncertainty. However, it provides a framework for adaptive management of the population in the future. As new data are collected under various management strategies the model can be updated to determine the most effective strategy. Breeding biology of the saddlebacks was

generally similar to island saddleback populations but fecundity rates were lower than that seen in other low density populations of North Island saddlebacks. This may have been due to the effect of the translocation which can lower reproduction and survival in the first year after release.

The saddleback's colonisation of Bushy Park was used as a natural experiment to investigate habitat selection. Eight out of nine saddleback pairs established home ranges around the periphery of the reserve in primarily dense secondary vegetation. The relationship between ten habitat variables and site occupancy was analysed in programme MARK. The best variable for predicting occupancy of a site was the complexity of the shrub tier (30 cm – 6 m). A complex habitat may represent a superior habitat by providing greater food availability and high quality nest sites. Caution is required when selecting release sites on the mainland as they tend towards mature forest which may not be high quality habitat for saddlebacks. Habitat quality at a release site is a vital consideration for ensuring a successful translocation outcome.

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