Great spotted kiwi changing gears: What activity can tell us about the translocation process

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Introduction

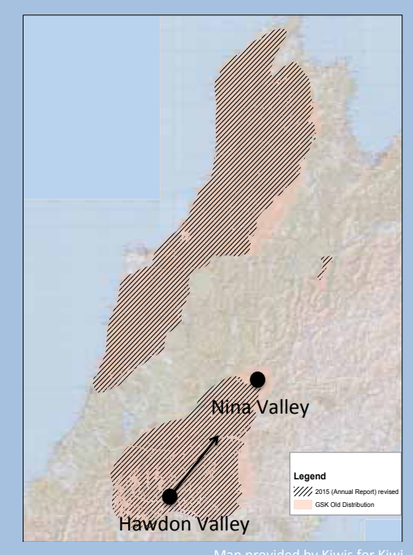
Great spotted kiwi (GSK) (*Apteryx haastii*) or *roroa/roa* are highly cryptic with isolated habitat and low densities making them difficult to study and therefore less studied than more accessible species. Currently populations are managed using a combination of predator control measures and translocation. This project was looking at the short to medium term effect of translocation in both resident and translocated GSK, using activity data collected from transmittered individuals.

Map of kiwi positions in the Nina Valley immediately post translocation

Study Area

8 Wild-to-wild translocated Hawdon GSK

5 Resident ONE Nina GSK



Map provided by Kiwis for Kiwi

Photo courtesy of Andrew Norton

Method

Activity data was analyzed using generalized linear mixed models (GLMMs) to determine whether activity levels were affected by the translocation. Factors considered were Bird ID, Season, Origin, Year, Sex, Paired (were they paired) and Translocation (pre or post).

Results

No difference detected in the immediate term (one week pre and post), possibly due to the small data set.

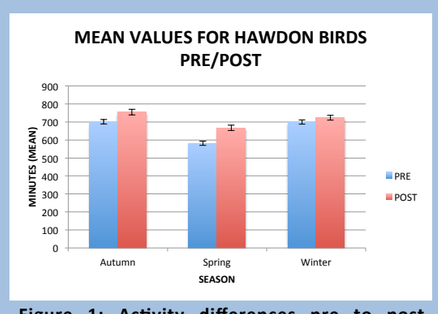


Figure 1: Activity differences pre to post translocation for Hawdon birds

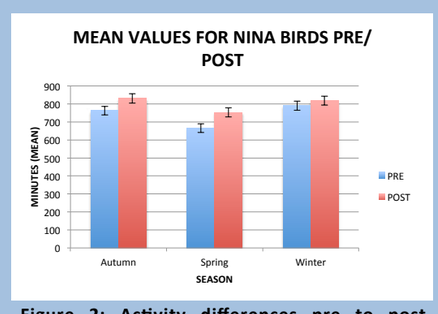


Figure 2: Activity differences pre to post translocation for Nina birds

Figures 1 and 2 show there is an increase of activity post translocation for both the Hawdon and Nina bird sets.

Interestingly, a **98 minute** difference in activity between the Nina and Hawdon birds was detected pre translocation, with the Hawdon birds displaying less activity overall, yet they had the biggest increase in activity post translocation.

Why the difference?

Differences between source and recipient site including:

- Interspecific food competitors e.g. rats (*Rattus spp.)* and mice (*Mus musculus*)[1]
- Habitat composition and terrain

Unknown or unquantified factors including:

- Intraspecific competition (territoriality and avoidance)[2]
- Stress due to translocation process[3]
- Current condition of the bird
- Dispersal characteristics (looking for superior territory)[4]

Why is this tack in monitoring important?

It is a useful tool for detecting trends in behaviour is for cryptic species.

Further research could:

- Detect differences in activity between populations and habitat type
- Detect currently unquantified habitat differences
- Validate use for health monitoring in the post translocation phase

Google map sourced: "Nina Valley, Lewis Pass." 42o27'47.1`4" S and 172o21'10.07" E. Google Earth. October 31, 2010. August 14th, 2015.

References and Acknowledgements

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