

Ewen lab hihi research update

May 2010



ACCEPTED PAPERS AND MEDIA *publications in scientific journals, popular science and media coverage*

- No papers accepted this month

PRESENTATIONS & VISITS & NEWS *conference presentations, visits to and from group members*

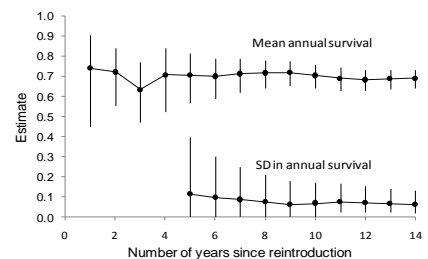
- **Rose successfully defended her PhD and is now truly Dr Rose Thorogood!! Congratulations again.**
- Rose has accepted a NERC funded PDRA position working with Prof. Nick Davies at Cambridge on cuckoos and their hosts.
- Patricia initiated an outreach project to encourage artists to use hihi as a model in their work and raise the species profile.
- John visited collaborators in Madrid to continue analysis of an avian malaria dataset that includes many samples from hihi.
- Ali and Nathalie had a meeting with Malcolm Nicoll and Deepa Senapathi to discuss collaboration and data sharing.
- Leila spent time at IVABS Massey University counting coccidian oocysts for her PhD project.

FEATURE STORY **a work in progress : Long-Term Studies of Population Dynamics on Tiritiri Matangi Island**

At the New Zealand Ecological Society Conference held in Auckland in 2008 there was a special symposium celebrating 25 years of ecological restoration on Tiritiri Matangi. Soon the New Zealand Journal of Ecology will publish the contributions to that meeting. Members of our group are contributing to this issue with a hihi research summary and with the feature work highlighted here with Doug as lead author.

One of the quandaries faced by ecological researchers is whether they should continue to invest in ongoing projects or whether they should shift their attention to new species or systems that may have received less attention. While research on Tiritiri Matangi has touched on a wide range of species and topics, the long-term projects on the reintroduced robin population (18 years) and hihi population (15 years) have accounted for the bulk of the published research, with 57 papers featuring these populations published up to the start of 2010. This literature has made contributions to several disciplines (wildlife management, population ecology, behavioural ecology, conservation genetics, ornithology and wildlife disease) at both the local and international level. However, most of these published papers use < 5 years of data, so most of the results made possible from the long-term data sets have yet to be published. We illustrate how long-term monitoring has allowed us to continually improve our understanding of the dynamics of these populations, and how this has allowed us to interpret and predict the effects of management. This management includes the 1993 poison drop, follow-up translocations to both populations, food provisioning and mite control for hihi, and most importantly, the ongoing harvesting of both populations for reintroduction to other locations. We are now able to detect complex and subtle processes that required many years of data, and present information on the number of years required to obtain various results. These results are now allowing us to develop long-term models integrating factors such as density-dependent regulation, demographic and environmental stochasticity. These models are not only relevant to the long-term viability and management of Tiritiri Matangi populations, but to small populations worldwide.

Figure 1. Improvement over time in estimation of mean annual survival and annual variation in survival of adult hihi on Tiritiri Matangi. Dots and vertical bars show estimates and 95% confidence limits obtained from Program MARK, using variance components output from model f_{P_i} when ≥ 3 years data were available and model f_{P_i} for the first two years. Comparison of alternative models for this population shows that that adult survival is similar for males and females, and that there is significant annual variation in survival but no trend over time.



Text: Doug Armstrong

FUNDING *our major funders and new funding news*

CURRENT AND PAST FUNDING – thank you!

+ British Research Council + Royal Society + Leverhulme Trust + Department of Conservation + AXA-fund + NERC + SoTM + ASAB + Wesfarmers Industrial and Safety NZ Ltd.

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