

David Medway Scholarship Report
North Island Brown Kiwi Vocal Behaviour
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The iconic North Island Brown Kiwi (*Apteryx mantelli*, Bartlett 1851) is a flightless nocturnal bird species endemic to Aotearoa New Zealand, fragmented across its mainland range and some of its offshore islands. These birds are known for their typical vocalisations, with males emitting series of whistle-like syllables, and females producing series of hoarser and lower frequency syllables.

However, little is known of North Island Brown Kiwi vocal behaviour and how this may relate to animal abundance, hence the development of more accurate and objective monitoring practices is included among the objectives of the Kiwi Recovery Plan.

Over the past few years, my supervisors and I endeavoured to investigate this issue with the long-term study North Island Brown Kiwi population of Ponui Island, in the Hauraki Gulf.

We specifically tested how accurately we could estimate animal abundance integrating information from acoustic recorders deployed in the field, miniature recorders embedded in the animals' very radio transmitters, and dog surveys. We further looked at whether acoustic playback could be used to standardise animals' response as seen in other species, as well as the possible effect of animal handling on vocal behaviour.

We found that including individual vocal behaviour into our statistical models would result in more reliable and accurate abundance estimates, also consistent with the traditional method (dog survey). We also found that information about the vocal behaviour of individuals from a given population can be used to inform estimates in areas with similar environmental conditions. These results are very promising but need to be expanded with trialling on a greater number of managed populations to achieve more reliable inferences at greater scales. Conversely, we have found that, at least for the populations involved in this study, there were no detectable differences in the vocal behaviour relating to either handling or playback at the community level.

I am very grateful, honoured and humbled to have been granted the David Medway Scholarship, which contributed to making this research possible. I am pleased to report that part of these results have already been presented to two national and two international conferences, and that we are finalising the preparation of the resulting scientific articles.



*Field work
Image taken by Andre Witehira*



*Field team on Ponui Island
Image taken by David Chamberlin*