

## Quantifying Whenua Hou Diving Petrel recruitment – final report

The Critically Endangered Whenua Hou Diving Petrel (referred to as Kuaka from hereon, following the local Kāi Tahu dialect) is one of the most threatened birds on the planet. To better understand Kuaka population dynamics and subsequently improve projections and identification of adequate management alternatives, I was granted a Birds New Zealand Research fund. Specifically, I aimed to:

- 1) Quantify Kuaka recruitment, including age-at-first-return,
- 2) Improve existing Kuaka population models,
- 3) Estimating impact and success of a Kuaka translocation.

To achieve these aims, I visited Whenua Hou during two field stints (October and January) together with ngā uri and (re)captured adults and chicks returning as adults. We captured ~52% of the Kuaka world population (103 adults). More importantly, we captured several banded chicks, now returning as adults (15 returning chicks from 4 different cohorts). With these (re)captures, we have gained an improved understanding of age-at-first-return: 1 year (5%), 2 year (70%), 3 year (20%), and 4 year (5%). We also updated and improved existing population models to gain a more robust estimate of juvenile survival: 0.752 (0.612-0.892). With this updated estimate, we projected the Kuaka population 30 years into the future. We estimated that in 2050 the Kuaka population will consist of 241 (2-951) adults. Further work is underway to identify adequate conservation measures to recover this small population, including potential translocations.

Thanks to the Birds New Zealand Research Fund, this work has enabled substantial gains into the understanding of Kuaka population dynamics, which will ultimately allow for better informed management alternatives.



A Kuaka/Whenua Hou Diving Petrel fledgling, after banding. Credit: Ursula Ellenberg.