

Preparing for future Whenua Hou Diving Petrel translocations

The recently-described and ‘Nationally Critical’ Whenua Hou Diving Petrel (WHDP) is one of the most threatened seabirds in the world, as only one colony (~200 adults) remains in the dunes of Whenua Hou (Codfish Island). Invasive predators have been eradicated on Whenua Hou, but the recovery of the WHDP remained limited. Threats inhibiting population recovery of the WHDP have been identified: erosion of their breeding habitat in sand dunes, caused by storms and climate change. While threats have been identified, conservation measures, such as translocations, are yet to be developed and implemented. Before the impact and success of translocations can be assessed, however, WHDP population dynamics need to be quantified. I have compiled historic data on WHDP nest counts as well as banding data. However, this data is of varying quality. I have increased monitoring intensity, continued nest counts, monitored > 120 nests, banded > 50% of fledglings, and banded > 95% of the adult population. In 2019/20, I aim to 1) further quantify population dynamics, 2) construct an integrated population model, and 3) identify a suitable future translocation site.

Specifically, I will monitor > 66% of all WHDP nests to assess fecundity, egg survival, and chick survival, recapture > 90% of the returning banded fledglings to assess juvenile survival, and recapture > 90% of the banded adults to assess adult survival. I will then construct an integrated population model (IPM), which fuses count (nest surveys) and demographic data (capture-mark-recapture studies) into a single modelling framework. I will use this IPM to simulate the impact of “harvesting” WHDP chicks on the source colony (Whenua Hou), as well as the likelihood of success of a WHDP translocation (i.e., establishment of the sink colony). Once the likelihood of translocation success has been assessed and the adequate translocation size (i.e., number of chicks) have been identified, a translocation site will be required. Therefore, I will visit predator-free Rarotoka (Centre Island; 25 km north of Whenua Hou). On Rarotoka, I will compare dune parameters) with parameters measured on Whenua Hou, and quantify seabird community to assess the island’s suitability for WHDP translocations. Achieving all three objectives will allow me to guide conservation management to rescue the WHDP from extinction and, subsequently reinstate the ecosystem services provided by this unique species.



Whenua Hou Diving Petrel fledgling. Credit: Jinty McTavish.