Preparing for future Whenua Hou Diving Petrel translocations – Final report

The recently-described and 'Nationally Critical' Whenua Hou Diving Petrel (WHDP) is one of the most threatened seabirds globally, as only one colony (~200 adults) remains in the dunes of Whenua Hou. To prevent the WHDP from sliding further towards extinction and with the help of the BNZRF 2019, I aimed to identify a suitable WHDP translocation site. To achieve my goal, I visited Rarotoka (Centre Island; 6 days) and Te Kakahu (Chalky Island; 1 day) to assess the suitability of these islands for future translocations of this taonga. I measured dune variables (plant diversity, slope, aspect, and sand penetrability) at 20 plots (1 m^2) on Te Kakahu, 50 plots on Rarotoka, and 70 plots on Whenua Hou and subsequently compared results among islands. In addition, on Rarotoka, I quantified seabird burrow density using repeat counts (to account for imperfect detection) at 50 plots (28.27 m^2) within the dunes of Rarotoka and 40 plots throughout the entire island. I searched the entire dune on Te Kakahu for seabird burrows.

Preliminary results show that the dunes of Rarotoka had higher plant cover (due to a more prominent invasive community) and shallower and looser slopes than the dunes of Whenua Hou. The orientation of these slopes (i.e., aspect) was comparable between both islands. In addition, the dunes of Te Kakahu had lower plant cover (due to a very limited invasive community) with similar slopes and orientation when compared to Whenua Hou. However, the dunes on Te Kakahu were considerably looser than the dunes on Whenua Hou. Furthermore, preliminary results show that Common Diving Petrels are rare within the dunes of Rarotoka (estimated at 16 burrows), while this species is reasonably common throughout the island (estimated at 4563 burrows). No Common Diving Petrels were found on Te Kakahu. As expected, no Whenua Hou Diving Petrels were found on either Rarotoka or Te Kakahu. These preliminary results indicate that suitable habitat for WHDPs is limited. Preferably, a translocation site within the dunes of Rarotoka would be selected that approximates the dune on Whenua Hou. The dunes on Te Kakahu appear too loose and too open for a WHDP translocation. The dune on Rarotoka could benefit from more directed management of invasive dune plants to open up more potential habitat for Whenua Hou Diving Petrels and promote native dune vegetation. Preliminary results from the seabird counts indicate that there is room in the dunes of Rarotoka for Whenua Hou Diving Petrels. In summary, this work has provided several new and useful insights into future management of the WHDP. More detailed analyses will provide further insights into whether the small WHDP population on Whenua Hou could sustain the "harvest" of chicks for future translocations.

Whenua Hou Diving Petrel. Credit: Mithuna Sothieson.