

## **Understanding how translocation efforts may impact the stress physiology and condition of semi-precocial seabird nestlings.**

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Petrels are threatened with rapidly declining populations, predominately the result of human-driven factors and translocations are increasingly recognised as a powerful conservation tool for this group. The philopatric nature of petrels dictates that for a translocation effort to be successful, it should occur before chicks have imprinted on their natal colony- typically just prior to fledging. However, very little is known about how the stress of translocation impacts on the birds during (pre-translocation monitoring, transport) and after (feeding regimes, handling, novel environment) the event, and whether this affects their ability to survive and establish viable new colonies.

Using mottled petrel as a model species, the main aim of this research is to study the cumulative impact of translocation and associated activities on chick physiology in order to determine the most stressful part of translocation, and enable mitigation of these stresses in the future. Furthermore, we aim to examine how stress caused by translocation could affect the dynamics exhibited by newly establishing petrel populations.

A translocation of 94 mottled petrel chicks from Whenua Hou/ Codfish Island to Boundary Stream Mainland Island (Hawke's Bay) was undertaken in April 2017, as part of a wider restoration project at the translocation site led by Poutiri Ao ō Tāne. Blood samples were collected and physical assessment of chick condition was recorded prior to, during and after this process. Blood sample and data analysis are currently being undertaken. Preliminary evidence shows that mottled petrel chicks are capable of mounting a full, adult-level stress response, and as such may be vulnerable to the impact of chronic stress caused by translocation events.

The outcomes of this research will help us to understand the impact of translocation and associated activities on chick physiology and enable mitigation of these stresses in the future. Furthermore, examining the impact of chronic stress as a result of conservation action at the individual level will assist our understanding of challenges and dynamics exhibited by newly establishing populations. This information will be particularly valuable to the management of often threatened species undergoing translocations, especially those that exhibit similar life history characteristics to petrels.

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**Top:** two chicks per transport box. Chicks are transported with nesting material and on a non-slip mat. **Bottom left:** boxes full of chicks ready for translocation. Yellow boxes contain 'stress bleeding chicks' as part of this research project. **Bottom right:** Chicks are loaded into a helicopter for the first leg of their journey north. Photos: Rachael Sagar.