



Tawaki Project – Year 5, field season 2018/19

The Fiordland penguin / tawaki's breeding and foraging behaviour proves to be just as diverse and dynamic as the marine environment the species inhabits. In September and October 2018, we studied the foraging behaviour and breeding ecology of our most elusive penguin species at three different sites simultaneously. Working with penguins from Jackson Head / West Coast, Harrison Cove in Milford Sound / Piopiotahi, and Codfish Island / Whenua Hou, we covered the species' entire breeding distribution and the differing ocean conditions the penguins have to live with while raising chicks.

Particularly encouraging was to observe that the tawaki colony at Jackson Head showed signs of improvements after three lower than average breeding seasons due to the effects of El Niño in 2015, a stoat incursion in 2016, and low breeding pair numbers in 2017 as an echo of the previous two bad years. We found new nests and chicks were chubby and doing well. Favourable foraging conditions meant that chick-rearing penguins did not travel as far as in the previous years and generally stayed within 40 km of their breeding colony. Most pairs manage to raise at least one chick to the crèching stage. This was contrasted by only average breeding seasons in Fiordland and on Whenua Hou, both sites with consistently high breeding success in the previous years. Several nests that had been active in the previous seasons remained empty resulting in a somewhat lower nest count at both locations. In Milford Sound, foraging behaviour indicated that the usually extremely favourable foraging conditions were compromised. Unlike in the previous seasons, when penguins found enough food to sometime two chicks within a 3-4 kilometre radius from their colony, several birds left the fjord to forage in the open ocean; one female even travelled as far as 120 km offshore before returning to feed her chick. Unlike in previous years, no pair managed to raise both chicks. On Whenua Hou, foraging ranges were comparable to the previous years with some birds foraging very close inshore in the Sealers Bay area and others travelling up to 30 km away towards the Northwest and Southwest of the Island. However, also not one of the 40 monitored nests managed to raise both chicks to the crèching stage.

Besides the GPS tracking, we also managed to recover 33 GLS loggers that we had fitted to both male and female tawaki last year. The tiny devices were fitted to leg bands, which stayed on the penguins for a whole year. Using light-data recorded by the device, we will now be able to reconstruct the penguins' at-sea movements throughout their pre-moult and winter dispersal periods. In the coming months we will now tackle the comprehensive analysis of 5-years of tawaki tracking data. Most of these data would not have been possible to be collect without the invaluable support of Birds NZ. The project will continue its work with tawaki in the coming years. For further information, please visit our website www.tawaki-project.org where we publish annual field reports.



Dave Houston holding a tawaki during download of GLS logger data, Codfish Island / Whenua Hou.