

Sentinels – Establishing long term monitoring of pakahā fluttering shearwater health

Pakahā fluttering shearwaters are a seemingly common seabird in the Hauraki Gulf, but little is known about their population trends or even their behaviours. This research aims to fill these knowledge gaps by combining physiological, demographic, and GPS tracking data. It forms the first stage of a three-year PhD study relating seabird health and breeding success to environmental fluctuations.

Using lightweight GPS loggers, I will track the foraging behaviours of adult fluttering shearwaters during chick-rearing to profile their foraging movements and identify potential ‘hotspots’ related to environmental variables such as ocean productivity and bathymetry. In addition, I will be undertaking a physiological investigation of the health of adults and chicks, including analysis of the energy content of their diet.

This project will form the baseline of the ongoing study to track changes over time that may impact breeding success. The wider PhD project will investigate how these changes might enable fluttering shearwaters and other seabird species to act as ‘sentinels’ or indicators of changes to marine productivity and prey availability. The funding provided by BirdsNZ will kickstart the project and allow for the GPS tracking component to ground-truth the physiological and stable isotope data. In the long term, this research will establish how ‘energy in’ (in terms of seabird diet, reliant on availability from the marine system and environmental fluctuations) has impacts on the behavioural and physiological adjustments that parent birds make during breeding, and how this influences the fledging success of chicks and population trends.



Pakahā Fluttering shearwater foraging with Fairy prions over a trevally school. Photo: Edin Whitehead