

Habitat utilization of tawaki in fjord ecosystems

The Tawaki Project has been studying the marine and breeding ecology of the enigmatic Fiordland penguin/tawaki across the species' distributional range since 2014. Data recorded using GPS dive loggers indicated that New Zealand's fjords may provide refugia from major environmental perturbations. For example, during the strong 2015 El Niño, tawaki breeding and foraging exclusively within Milford Sound showed extremely short foraging ranges and high breeding success, while conspecifics at Jackson Head travelled up to 100 km from their nest sites which resulted in chick starvation and low breeding success. Clearly, the feeding conditions within the fjord were a lot better than on the open coast.

Over the coming 10 years we plan to examine the penguins' foraging ecology in the context of the unique fjord ecosystems. We plan to study the foraging ecology of penguins that breed deep within fjord with tawaki that breed at fjord entrances. Apart from GPS dive loggers that we have been successfully deploying on tawaki for the past few years, we plan to equip the penguins with high-definition camera loggers which provide a unique insight into their actual underwater behaviour. We hope to learn more about tawaki diet composition, how their prey is distributed within the fjords and what makes Fiordland tawaki so resilient to environmental change.

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