Supplementary feeding and post-fledging dispersal of hōiho/yellow-eyed penguins

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The conservation status of the yellow-eyed penguin has recently been upgraded to 'Threatened – Nationally Endangered', while being classified as 'Endangered' on the IUCN Red List of Threatened Species. Commonly, species like the yellow-eyed penguin, with small and declining populations are deemed to require intervention to halt and reverse declines. As management strategies are implemented, it is important to evaluate these conservation actions to ensure they are genuinely benefiting the species as intended, and that resources and effort put into conserving the species are not going to waste.

Over the last seven years, large numbers of hōiho chicks have been underweight or emaciated at *c*. 90 days, which would have resulted in their death before or shortly after fledging. To remove pressure from adults prior to moult, and to prevent death of chicks from starvation, DOC has sanctioned that chicks weighing under 4.5kg at *c*. 90 days be assessed and removed from their nests for supplementary feeding to one of three penguin-specific DOC-approved rehabilitation centres, rather than being left to die from starvation.

My Honours research indicates that rehabilitation of pre-fledge chicks at Penguin Place yields a 90 % release into the wild following successfully rehabilitation, irrespective of the number of admissions to the centre in the season. Mass starvation events, indicated by most chicks in the region having weights of under 5 kg, were the cause of large numbers of admissions from 2007 to 2016. My research focused on the success of rehabilitation of these chicks and their subsequent dispersal. A grant from Birds New Zealand's Research Fund in 2016, as well as some crowdfunding, allowed me to purchase several GSM-GPS devices to track these supplementary fed chicks once they departed for the sea. This emergent technology allows for stored GPS locations to be sent via the GSM (cell phone) network when the birds are on the surface of the ocean. Three chicks were fitted with a Flite Tag (GPS Collars UK) and two chicks were fitted with a waterproofed Petrek 3G (Lintek) device.

Due to technical difficulties with the dispersal component of this study little data was obtained, therefore research into juvenile dispersal, especially that of rehabilitated chicks, is still required to ensure captive reared chicks have a dispersal pattern comparable to naturally fledged chicks.

Hoiho equipped with Flite Tag GSM-GPS from GPS Collars UK