



Re-establishment of Providence petrels (*Pterodroma solandri*) on Norfolk Island

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Seabird translocations are being increasingly proposed during the past decade in response to the large number of seabird species threatened with extinction throughout the world (28 percent). Nevertheless, information on population mixing among seabird colonies is crucial in assessing the genetic risks posed by this method of conservation (e.g. reduced genetic variation, genetic load or outbreeding depression).

The Providence petrel (*Pterodroma solandri*) is IUCN listed as Vulnerable due to its restricted breeding range. The only significant breeding locality of this species of pelagic seabird (approx. 32,000 breeding pairs) is Lord Howe Island, a small island off the eastern coast of Australia. Providence petrels used to breed on Norfolk Island (approx. 1,000,000 breeding pairs) before becoming extinct after European settlement by the late 18th century. The species was considered extinct within the Norfolk Island group until 1986 when a small population (approx. 20 breeding pairs) was discovered on Phillip Island, seven kilometres south of Norfolk Island. Re-establishment of a Norfolk Island colony using Lord Howe Island individuals has been proposed to reduce the extinction risk of this species and to provide key nutrients for the regeneration of threatened native forests and associated species. However, this translocation may erode any distinctiveness of the small adjacent Phillip Island colony, which shows a specific behavioural adaptation to diurnal predators.

The study used molecular data to investigate genetic connectivity among Providence petrel colonies and quantify the age of divergence between populations in order to assess the maximum possible duration across which differences in roosting behaviour developed. Primary results show a high gene flow between colonies and limited risks associated with this conservation



Providence petrels at their nesting sites.



Anicee Lombal presenting her research on the re-establishment of Providence petrels on Norfolk Island at the Sixth International Albatross and Petrel Conference in Barcelona.



Anicee Lombal holding a Providence petrel on Lord Howe Island.

management plan. If this translocation occurs, the resulting increase in marine-sourced nutrients would assist in halting and reversing the decline of Norfolk Island's native forest and associated fauna, which includes many other imperilled birds (e.g. the endangered Norfolk Island green parrot (*Cyanoramphus cookie*)).

This study provides crucial information on an understudied Australian species, an indicator of human-induced change, which is fundamental to the understanding and management of our environment. The Australian Wildlife Society has assisted in conserving the Providence petrel by enabling the presentation of my research at the Sixth International Albatross and Petrel Conference in Barcelona. This meeting was a fantastic opportunity to interact with an international group of scientists with similar interests to my research topic in order to have access to their expertise on the re-establishment of this key species on Norfolk Island in the near future.

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Providence petrels flying around their nesting sites at dusk.