

Native plants linked to Kakapo's survival

May 21 2014

Dr Catherine Davis, who graduated last week with a PhD in Cell and Molecular Bioscience, undertook ground-breaking research into the unique reproductive approach of the Kākāpō, which is thought to be linked to the masting, or abundant fruiting, of native foods such as rimu and beech trees.

Dr Davis extracted the DNA of tissue samples from multiple Kākāpō, supplied by the Department of Conservation (DoC) and other researchers, determined the structures of certain proteins and compared them with the DNA of other birds such as chickens. She found that the sequences in New Zealand parrots were, in fact, different.

"I found that the sequence of the protein could potentially influence the fertility, and therefore the reproductive pattern, of Kākāpō. Only 129 Kākāpō remain alive and none are known to be on mainland New Zealand."

Dr Davis also sought to test extracts of native plants known to be a source of food for Kākāpō to determine if exposure to different compounds at certain times of the year could be linked to the species' reproductive cycle.

"For example, is there something present (or absent) in the food that the Kākāpō are eating that is more abundant during a mast year that makes them more fertile?"

Dr Davis looked at different [native plants](#) to see if they contained

compounds that had the ability to act like oestrogen and whether these levels changed when you compared a mast year to a non-mast year.

However, while more research is needed on the potency of the selected plants, Dr Davis believes that if it can be determined that these plants have the steroid-like compounds present, then organisations such as DoC could look at introducing more of these [plants](#) into the Kākāpō's environment.

It is the first time this type of DNA research into New Zealand parrots has been undertaken and Dr Davis believes it has potential to feed into DoC's long-term Kākāpō strategy and influence future research.

It's perhaps no surprise Dr Davis pursued this line of study—her family tree is populated with scientists, including her parents and siblings.

The former Queen Margaret College student, who now lives in Kelburn, says she hopes to pursue post-doctoral work either building on her Kākāpō research, or another aspect of biology.

Provided by Victoria University

Citation: Native plants linked to Kakapo's survival (2014, May 21) retrieved 28 April 2024 from <https://phys.org/news/2014-05-native-linked-kakapo-survival.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.