

Boosting the breeding of New Zealand's endangered birds

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New Victoria University research suggests hormones found in New Zealand's native plants are helping endangered native birds to breed successfully.

The study, published in *Reproduction, Fertility and Development* and conducted by Victoria Ph.D. graduate Dr. Catherine Davis, looks at the potential link between parrot breeding and high levels of fruiting by native [plants](#).

"A mast year is a year when plants produce masses of edible fruit or seeds," explains co-supervisor Dr. Janet Pitman from Victoria's School of Biological Sciences.

"Kākāpō breed only in mast years—that's once every three or four years. So there's something happening in those mast years that triggers their breeding."

Kākāpō are critically endangered, with fewer than 160 known surviving birds.

Dr. Pitman says it's been hypothesised that kākāpō require more of the hormone [oestrogen](#) than they can produce themselves to make a fertile egg.

"We know from other studies that oestrogens present in new grass may interfere with reproduction in animals, and we know kākāpō seek out

fruit from rimu to eat during mast years.

"We believe kākāpō get extra oestrogen from their diet during mast years, and rimu and other native plants provide that extra oestrogen that is key to kākāpō reproduction."

Dr. Pitman and her research team set out to shed light on this potential hormonal link.

"We tested various native plant species for oestrogenic content—and we found that indeed there is a high amount of oestrogen in some of New Zealand's native plants," she says.

"We also looked at the receptivity of parrots to oestrogen. We studied the genetic makeup of the receptor that is activated by oestrogens in the New Zealand kākāpō, kea, kākā, kākāriki, the Australian cockatiel, and compared them with those in the chicken."

"We found that all of the parrot species have a unique sequence in this receptor gene that may make them more sensitive to oestrogen, compared to other bird species or humans."

Dr. Pitman says this suggests the oestrogen produced in native trees may provide the link between mast years and successful breeding of parrots like kākāpō.

"With further research we're hoping to identify the specific oestrogenic settings in [native plants](#). This information may enable a synthetic model to be produced, so we could potentially use it increase the fertility of our native parrots."

Provided by Victoria University of Wellington

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