Title: “Quick tidy up”

Description: Kākā at Orokonui

Photographer’s name: Noelle Bennett

Where and when: Orokonui Ecosanctuary, Dunedin. February 2018.

Sustainability: First described in 1788, Kākā are mainly arboreal living in the mid to high canopy. They are particularly unusual because they have retained more of the primitive features that have been lost by other parrots. It is thought this was because they split off from the other parrots around 100 million years ago. This is a common pattern amongst New Zealand’s plants and animals – a long period of isolation makes them unique and doubly worth saving from a biodiversity point of view, but also more vulnerable to new disturbances like habitat loss and introduction of new predators or competitors.

Where there are no stoats, Kākā populations are healthy, even if predators such as cats and rats are present. On Kapiti Island, a stoat-free island of some 1500 hectares, there are about 1,000 Kākā. By contrast, d’Urville Island which is at the same latitude and has approximately 8,000 hectares of forest, stoats are present and the population of Kākā is down to about a dozen birds. Stoats are a formidable conservation foe – they climb, have keen hearing, and an acute sense of smell, so they quickly find the tree cavities where the kākā nest. Although small, the stoat is capable of killing the adult kākā while she is sitting on the nest. Because the tree hole usually has only one entrance, she is trapped when the stoat appears at the door. Many kākā populations on the mainland now have an excess of males because of this added predation risk to the females. Kākā can live for up to 20 years but with the presence of stoats, few will die of old age.

As for Kapiti Island and other stoat-free islands like it, the Kākā population will be safe until those islands reach their “carrying capacity”. This is the point where no more kākā can fit and get enough food. Excess fledglings will be forced to migrate to the mainland at which point they will once again face the dangers posed by stoats. Stoats are hard to control there. The females have “delayed implantation” i.e. 8-10 eggs are fertilised even before the adolescent female leaves her natal den (she may even be impregnated by her father), but the eggs suspend further development and float in the mothers’ uterus. She carries the fertilised eggs until just before the next breeding season when they implant and complete their development. That means that the females are already pregnant and ready to breed even if a male is not around. And to make matters worse, these “pre-loaded” stoats can travel enormous distances – one stoat tagged and released in the Eglinton Valley in Fiordland just happened to be recaught at Burwood Bush Takahe rearing facility, the nearest trapping locality, some 64 km away. What were the chances of that recapture? Some stoats are probably dispersing 100s of km from where they were born to wreak havoc in new ecological landscapes. So there is a wandering wave of pregnant stoats out there coming at the breeding birds each breeding season even if the previous stoats had been trapped out . To make matters worse, the stoats are very hard to catch

in the springtime, just when many native birds are starting to sit on their nests.

Predator-proof fences are one solution, albeit an expensive one, to these challenges. Kākā have responded spectacularly at Zealandia, a fenced ecosanctuary on the edge of Wellington city. They are now spilling over into city gardens, much to the delight the town folk. That is a wonderful demonstration and daily reminder of community conservation in action. It is hoped that the same recolonisation of a city will occur in Dunedin from Kākā spilling out of the Orokonui Ecosanctuary, some 15 km from the edge of town.

Kākā's feeding habits and choices bring them into direct competition with both possum and introduced wasps for the high-energy foods they need for breeding. A group of 31 Kākā were studied for a period of five years at Nelson Lakes National Park. Only two pairs attempted to breed and only two fledglings were raised by one female during that study. Shortly after the study finished, that one successful female was killed...by a stoat. Those odds do not bode well for the Kākā on the mainland unless we can mount widespread predator control or exclude them using predator-proof fences.

Photographer's notes: We had both seen and heard Kākā as we wandered around Orokonui Ecosanctuary but they always seemed to be where we weren't! So as we came around the corner we were very surprised to see this Kākā sitting having a quick wash and brush-up. We initially stopped, holding our breath, afraid that our presence would make this beautiful bird taken flight. There was a brief pause in preening whilst we were scrutinised and then normal service was resumed and the preening continued, with the Kākā being apparently only too happy to ignore us.

Photo specs: This image is a composite produced from one single image which has been used multiple times with differing effects applied to each iteration to provide a more aesthetically pleasing end result. Technical specs: The image was taken using a Panasonic DMC-GH4 camera and a Panasonic Leica DG 100-400mm f/4-6.3 ASPH lens. Exposure details - 1/60 sec at f5.6 with an ISO of 1600 and a focal length of 236mm (472mm full frame equivalent).

Digital specs: 6493 x 5509 pixels (35.77MP) @ 300dpi

Key words: birds, Kākā, Orokonui, ecosanctuary, Kapiti Island, Zealandia, carrying capacity, predation, sex ratio, spill-over, stoats, rats, possums, Noelle Bennett, Ecosystems Photography, sustainability.

Price: $200 (incl. GST) for use of the digital image. Visit www.ecosystemsphotography/sales for details & to order, or to get a quote if you would like a high-quality print.

Donation: The price includes a $100 donation to a sustainability organisation or project of your choice, or otherwise to the Orokonui Ecosanctuary https://orokonui.nz/.

I recommend that the donation goes to *Orokonui Ecosanctuary* to support their ecosystem restoration work where this image was taken. Their predator-proof fence is building local bird populations to the point where the birds are spilling out into the surrounding landscape – the so-called "Halo effect".

Image ref: NB#015 (please use this reference in all orders and correspondence).

Noelle Bennett
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