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SHORT NOTE

Nocturnal roost behaviour of North Island Kokako

The North Island Kokako (*Callaeas cinerea wilsoni*) is a member of the endemic family of New Zealand wattlebirds, Callaeidae. It is territorial and maintains a pair bond year round (Hay 1981). It has declined greatly in both numbers and distribution since European settlement (Lavers 1978), and it is listed as endangered (Bell 1986). Our observations were inspired by the knowledge that predation is likely to be an important cause of Kokako decline. Kokako may be vulnerable to predation at night.

This note on the nocturnal roosting behaviour of Kokako is based on observations from January to March 1991 in the Rotoehu State Forest.

Rotoehu State Forest is about 45 km northeast of Rotorua in the central North Island. The forest at Rotoehu is dominated by tawa (*Beilschmiedia tawa*), while kohekohe (*Dysoxylum spectabile*), mangeao (*Litsea calicaris*), rewarewa (*Knightia excelsa*), and hinau (*Elaeocarpus dentatus*) are also common canopy species. Emergent podocarps, predominantly rimu (*Dacridium cupressinum*), were once moderately abundant but almost all were removed by logging in the 1940s (Leathwick 1984).

The roosts of six Kokako (two pairs and two breeding females) were located once a week by radiotelemetry. We located the Kokako just before or at dusk and stayed with them until after dark. The species of the roost tree and its height relative to canopy height were recorded when possible. The tree height and the strength of the transmitter signal were used to estimate the height that the Kokako were roosting.

Additional roosting observations were made casually of a further nine Kokako, including adults and dependent young.

The roost sites of one pair, Hika and Tikka, were found once in each of nine consecutive weeks. Each time Hika and Tikka roosted together in a different place within their known territory.

Another pair, Pop and Tringle, were together the first occasion they were found roosting. Unfortunately Tringle died. Pop was then found to

roost once in the same place as the pair had roosted previously and in three different places in its territory on the three other occasions it was observed.

At night the female members of the two nesting pairs observed remained at the nest.

As the male members of the nesting pairs did not have transmitters we are not sure where they roosted while nesting. Two pre-dawn observations of the male member of another nesting pair, Scuttlemania, indicated that he did not roost at the nest. Scuttlemania was seen moving from his night roost some 50 metres from the nest site on two separate occasions.

Three pre-dawn observations of two separate family units indicated that adults roost close to their dependent young. Eco and his juvenile were roosting within 20 metres of each other on two occasions about two weeks apart. Mad-E and Scuttlemania were roosting within 20-30 metres of two of their juveniles. Their third juvenile was roosting by itself some 50 metres away. It was independent within 5 days of this observation.

Three Kokako, Scuttlemania and a pair, Wissel and Warble, were all seen to move up to 50 metres from their night roosts before beginning their dawn chorus. It is therefore not possible to identify Kokako roost sites by where they begin their dawn chorus.

Kokako that were not nesting roosted mainly in tawa trees (54%, n = 13). Mangeao (23%), kamahi *Weinmania racemosa* (15%) and rewarewa (8%) were also used as roost trees. The strength of the transmitter signal was not always a good guide to roost height, but our observations indicated that the Kokako were roosting near the top of these tall trees.

Survival of banded Kokako at Rotoehu indicates that adult mortality is low whereas eggs and nestlings are very vulnerable to predation (J. Innes, pers. comm.). However, one adult, Tracey, that died on her nest was probably preyed on while incubating. Another female, Tu, lost feathers on and around the nest at the time her eggs were taken and so it is likely she narrowly escaped predation herself.

Remaining at the same place every night, as nesting female Kokako do, could make them more vulnerable to predation, while changing roost locations each night could prevent predation.

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