

A male little spotted kiwi in an aggressive pose
Photo: P. Daniel

have increased: a Wildlife Service survey in 1982 found little spotted kiwis inhabiting all suitable habitats, with a breeding population exceeding 1000 birds.

Puzzling reference

No studies of the numbers or breeding of little spotted kiwis on Kapiti Island were made until 1980, when Mr Jolly and his team began their work. It is difficult therefore, to understand the reference in the articles to a "disquieting trend" that has emerged "over the last five years" when earlier studies are lacking. The cause for his concern, however, is that two-thirds of the eggs produced by the 10 pairs of kiwis he studied have apparently been lost to wekas.

It may be thought that eggs are a major food item of wekas because a little spotted kiwi egg eaten by a weka is pictured in the article and is described as one of many. A recent PhD study of wekas made on Kapiti Island by Mr A. J. Beauchamp failed to show any evidence of kiwi egg predation. No egg shell was found in stomachs or faeces and the diet consisted largely of invertebrates and various fruit from native trees. There is no doubt that some wekas eat some kiwi eggs but the question not yet answered is whether this happens often enough to adversely affect kiwi numbers. If two-thirds of the eggs were lost, what happened to the remaining third?

Losses of eggs and chicks, caused by predators and other factors, are common in any population of breeding birds. These losses become important only when the number of young birds reaching adulthood falls short of the number of adults that die each year. In that case the population must decline. If we assume that a kiwi's adult life averages 20 years and that we have a breeding population of 1000 birds, then 50 young birds must be added to the breeding population each year if the population is not to decline. Put another way, each pair need produce a grown-up offspring only twice in their lifetime in order to replace themselves. We have no evidence of a decline in the breeding population of little spotted kiwis on Kapiti Island.

The 10 pairs of kiwis studied represent no more than 2 percent of a population of 1000 birds. It would be risky to generalize from such a small sample unless one was sure it was representative. There are two reasons why we doubt that it is. First, some kiwi burrows are more than 2 m in length while others are short. Eggs in short burrows are more likely to be found by wekas. This crucial point is not discussed in the article although in an earlier 1983 article Mr Jolly stated that "all egg losses have been from the part of the study area where burrows were shorter and presumably more accessible to the weka".



Second is the unavoidable effect of human disturbance on the birds studied. We know that the Wildlife Service team have taken great care to minimize this disturbance, but birds are caught, measured and weighed at all stages of the breeding cycle, transmitters are fitted, and video recorders set up outside nesting burrows. Wekas are highly inquisitive opportunists, and it is therefore possible that this human activity around the kiwis and their nesting burrows has increased the chances of wekas finding kiwi eggs.

Kiwis vulnerable?

The article implies that wekas probably attack kiwi chicks, because kiwis seem "peculiarly vulnerable" to wekas. There is evidence to the contrary. Mr Beauchamp's study showed that although wekas often call at night, they are unlikely to kill birds then because they cannot see adequately in the dark. Kiwis and their chicks are active at night when wekas are less active and a well-camouflaged chick may be difficult to find, either at night or during the day. At present, there is no evidence that wekas kill kiwi chicks. Furthermore, on several occasions little spotted kiwis have been seen chasing wekas at night.

Because kiwi chicks were rarely, if ever, reported on Kapiti Island before the current intensive study began, one must accept that they are not conspicuous. The article states that in four seasons of all-night patrols only 17

chicks have been found. But how many hours have been spent in actual searching? And what are the chances of a small party, using only headlamps in sometimes thick undergrowth and rugged terrain, finding more than a fraction of the chicks present?

We do not wish to belittle the importance of the research undertaken by Mr Jolly and his team. Nor should anybody underestimate the difficulty of studying a burrow-nesting nocturnal bird. As Mr Jolly pointed out, future research is designed to test these questions concerning the interaction between wekas and kiwis, and as we have pointed out, many questions remain.

Wekas and kiwis are the only flightless predators among New Zealand native birds. Wekas belong to the rail family, a group that includes the banded rail, marsh crake and takahe. Most New Zealand rails are closely related to rails in Australia or the Pacific Islands. Wekas, however, like takahe, are flightless rails which have been long enough in New Zealand to diverge significantly from their flying ancestors. Not less than 6 species of flightless or near-flightless rail have become extinct in the South Pacific during European times. In the same period wekas have disappeared from eastern South Island, most of Stewart Island, and from almost all of the North Island except Gisborne. Thus some island populations of wekas will always be needed to safeguard the species.