

## SHORT NOTE

**Contemporary observations of predation on the buff weka (*Gallirallus australis hectori*) by ferrets in the South Island during the nineteenth century**

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The weka (*Gallirallus australis*), a large flightless rail endemic to New Zealand, had long been an important item of diet for the Maori. Early Europeans working in the back country also often depended for food on the bird they knew as the Maori hen or woodhen. It is a bold, curious, predatory bird with a dagger-like beak and omnivorous food habits, capable of attacking potential prey ranging from insects to small vertebrates (Heather & Robertson 2015), including even other predators, supplemented with fruit and carrion. Thomson (1922: 74) cites an observation of a weka killing a weasel, in which it 'circled round the weasel watching a chance to spring in and strike it, which it did, always on the head, finally stretching its opponent out'. During an irruption of forest rodents in Fiordland, western weka (*G. a. australis*) could be seen eagerly snapping up mice and swallowing them head first (Philpott 1919).

The subspecies endemic to the eastern South Island, the buff weka (*G. a. hectori*), was widespread and abundant throughout Otago and Southland

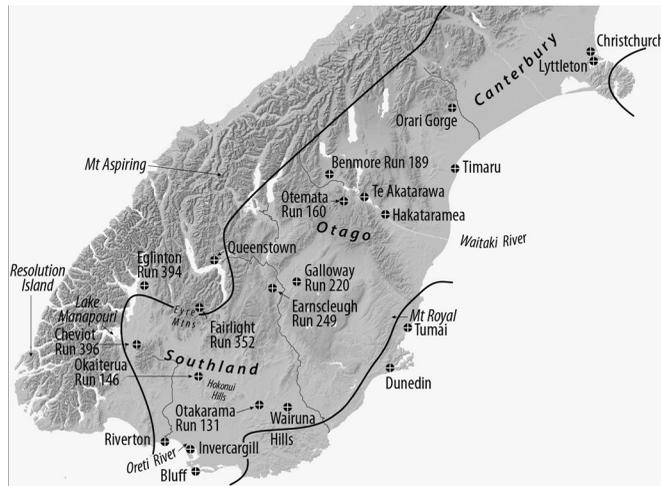
in the 1850s, but by 1920, it had become extinct on the mainland. It now survives only on Chatham and Pitt Islands, where a group of 12 buff weka was introduced in 1905. Systematic searches of documents preserved by Archives New Zealand, the Hocken Library, contemporary news reports available at <https://paperspast.natlib.govt.nz/>, and regional histories contain a wealth of little-known information about the former abundance of buff weka in the far south. These observations help to explain why the buff weka, once one of the most common birds in the South Island, became locally extinct within the period of a few decades.

Three reports cited by Beattie (1979) illustrate the sudden disappearance of weka from a number of locations in Southland (Fig. 1). The Otakarama run (#131), east of the present town of Gore, was 'quite treeless in the 1850s, but littered with charred logs from ancient Maori fires. The ground was dissected with creeks and gullies full of weka, which were abundant until 1888 or 1889, and then they seemed to disappear completely' (ibid. p. 161). A few kilometres west on the Hokonui Hills, 'weka were so numerous in 1868 that everything moveable had to be put up out of their reach or they would be

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**Fig. 1.** Map of the southern South Island, New Zealand, showing locations of places mentioned in the text. Dark lines enclose the extent of open country, as defined by Holland & Figgins (2015), i.e., the main area covered by pastoral runs and the favoured habitat for rabbits.

dragged off. Maori tradition recognised that district as a good place for catching fat woodhens, and they made annual foraging trips' to collect weka for winter storage (*ibid.* p. 218).

Further north, on the Fairlight run (#352) east of the Eyre Mountains, there were 'no rabbits in 1865, [only] luxuriant cattle feed, with weka abounding, and other native birds simply swarming. Rabbits arrived in 1873' (*ibid.*, p. 351).

The European settlers were well aware of the potential value of the weka as a resident predator of the rabbit, perhaps even capable of stemming the invasion of pastoral lands. For example, as early as 1876, the President of the Otago Institute suggested that the settlers should preserve the woodhen as a useful ally in the destruction of rabbits (*Southland Times* 1876). He added his opinion that the rabbit would never have attained its present pest proportions if the southern settlers had been less destructive of the woodhen (*Evening Post* 1876).

Some support for this view can be found in the Benmore Letter Books (Pinney unpubl.). In July 1877, the station manager Thomas Middleton wrote to Benmore's owner, Hon. Robert Campbell, with a reassuring forecast that 'I feel sure the rabbits are

done for here ...the weka are killing them fast and I do not think there will be another [problem?] next year'. Pinney wrote in the margin of his notes that this was the "1st mention of rabbit" at Benmore.

Even 3 years later, Middleton was still more concerned about attacks by kea on the sheep than about rabbits. In his letter to Campbell of 1 October 1880 he mentioned first that he had 2 men out laying poison for parrots [kea], and then: 'I am certain that the weka is the best friend we have in keeping down the rabbits. I have no fear of the sort of rabbit we have at present ever becoming dangerous' (Pinney unpubl.).

Despite this early optimism, over the next 5 years, first ferrets and then stoats and weasels arrived at Benmore, and Middleton's opinion changed. His comments ranged from anxious prediction in October 1881 ('Ferrets are to be found all over the run...rabbiter say they will kill the wekas'), through confirmation in May 1882 ('Ferrets .... will help keep down the rabbits but are destroying wekas') to anger in September 1882 ('It is to be deplored that the ferret and wekas are enemies. The former will kill the weka in a hole and the weka again is supposed to [help?] the ferret in

the open') to sadness in February 1885 ('The wekas are very plentiful at the low end of Benmore but I fear they won't last long') and 1886 ('No wekas due to work of ferrets') (Pinney unpubl.).

Richard Henry is best known as the caretaker of Resolution Island, but years before he moved there, he suggested one reason why the normally pugnacious weka was losing the battle against ferrets on the mainland: 'The poor weka was once very plentiful in New Zealand, but before the ferret, it disappears like a shadow. It used to kill mice, rats, and young rabbits, and when it saw a ferret, it chased it like a rat, and of course gave up the ghost' (Henry 1887: 16).

Middleton and Henry were not alone in their opinions. C. J. Tripp, the long-time resident of the Orari Gorge run inland from Geraldine, joined a long list of people writing to the Colonial Secretary protesting the deliberate introduction of mustelids and their effects on weka. In February 1886 he wrote: 'I am quite convinced in my mind that the Government have made a very great mistake .... In every rabbit hole on my run in which I try a ferret to turn out the rabbits out comes a weka; now these wekas destroy not only rabbits but rats - I have seen a weka chase a rat in and out of a thicket and across a stream and seen the rat run for his life from these birds. ... we can with poison and dogs keep the rabbits well under with the assistance of the weka which goes into holes in the ground and kills every rabbit small as well as big' (Multiple correspondents, 1886). Tripp was convinced that 'the vermin have killed off every weka in the District'.

The weka probably did not disappear quite as fast as that claimed, but Tripp's concern was valid and widely shared. But B.P. Bayly, the Chief Inspector in charge of the mustelid introduction programme, pointed out that Tripp had asked to be allowed to buy stoats to turn out on his own run, so he must have changed his mind since they arrived. He added that he could see no reason to expect that 'the stoat and weasel are likely to become the curse the writers state' (Multiple correspondents, 1886).

Others were more concerned about protecting introduced game birds than native birds, even to the extent of hunting weka with greyhounds, in order to make room for the pheasants (Otago Witness 1876). Yet others agreed that weka were a better weapon against rabbits than introduced mustelids or poisoned bait, both of which also killed game birds. The correspondence columns of the Otago newspapers preserve a flavour of the debate. For example: 'I fully endorse the popular opinion ..... We have a better remedy, and more suitable to the Colony, in wild cats, wekas, and hawks, all of which are deadly enemies to 'bunny.' The wekas ... pay the penalty through the poison laid for rabbits' (Otago Witness 1882). The Otago

Acclimatisation Society viewed 'with deep regret the steps which the Government has seen fit to take in connection with the introduction of ... vermin ..... these animals will prove of little use in destroying rabbits, and will on the other hand, in all likelihood, destroy Maori hens and other native birds, as well as domestic poultry' (Manawatu Standard 1884).

By far the most passionate and sustained rear-guard campaign to protect the weka was staged by William Rees, the Government Sheep Inspector based at Timaru. A long correspondence between Rees and the Colonial Secretary in Wellington preserves the detailed arguments in one file (Rees & Colonial Secretary 1883).

In October 1883, Rees complained to the Colonial Secretary that weka were being wantonly destroyed, and requested that they be legally protected as a 'natural enemy' of the rabbit in the same way as were mustelids and cats. The official reply pointed out that weka were an important article of food for the Maori, so it would not be advisable to prohibit the killing of weka by them. Rees retorted that it would be better to take off every man and dog now employed in rabbiting, because they systematically destroy weka, and let the weka deal with the rabbit alone. The Colonial Secretary took refuge in semantics, stating the 'the law will not allow protection of the weka since the word used in Section 28 of the Rabbit Nuisance Act 1882 [which protected all natural enemies of the rabbit, native or introduced] is "animal", and Government is advised that in law that word includes only mammals'.

Rees was not put off. The 1884 annual report of the Rabbit Nuisance Committee published in June 1884 includes his statement, expressed as strongly as permitted, 'I earnestly wish the weka to be protected, as we have no better natural enemy to the rabbit' (Bayly 1884).

In June 1886, Rees submitted a very detailed report of the distribution of rabbits in the South Canterbury district, with maps and a 5-page memo pointing out that, after a 3-year concentrated campaign, many properties had few rabbits and no rabbiters or mustelids. Over most of the District weka were swarming, except on the Te Akatarawa run on the north bank of the Waitaki River, where a professional rabbitier ran traps that killed many weka. 'I feel quite certain that to the weka we principally owe at this moment the marked decrease of the rabbits in S Canterbury where three years since they were in thousands. .... Every one who has had experience in country life where there are rabbits and wekas will confirm what I say. I have seen them kill full grown rabbits - and as to the young ones they never leave one alive when once they find the nest. .... Nothing but my extreme conviction of the necessity of giving immediate

protection to the weka causes me again to urge this matter' (Rees & Colonial Secretary 1883-86).

Rees added letters from some of his neighbours confirming their agreement, including one from J. W. Miller of Hakataramea Downs, that [We have] 'three ferrets on the property for rats but should decidedly not think of turning them out as they would destroy the wekas which are better rabbit exterminators than all the other [introduced] vermin ..... The weka is protected here and therefore numerous and which I believe is the cause of the rabbits not now increasing on this property'.

Rees ended by....'drawing your attention most earnestly to my statements as regards the weka - and the great necessity that exists for its immediate legal protection (at all times) from destruction as being one of, if not the greatest, natural enemy we possess to the rabbit'. The Colonial Secretary forwarded his report to the Joint Committee on Rabbit and Sheep Acts then sitting. The Joint Committee's report published on 20 July 1886 (Anon 1886) does not mention Rees or the weka, and the official position that the weka could not legally be protected remained unchanged.

The lack of any official protection meant that for the following decades, weka had to contend with human hunters as well as predation by mustelids. The file of correspondence (Rees & Colonial Secretary 1883-86) ends in 1889, with a note from J. M. Scott, the Sheep Inspector at Queenstown: 'Sorry to report weka being wantonly destroyed in the back country near Mt Aspiring ...At all the rabbiters huts they are killed by the dozen...they are not poisoned but cured and smoked for cooking'. Scott asked his superiors for advice on 'what steps I am supposed to take to punish these offenders'. Without legal authority, nothing could be done.

At this distance in time it is not possible for us to judge the effects of ferret predation on weka in isolation from the many other changes of the time (*e.g.*, in snow cover or drought, land-use, pastoral management, fire regime, rabbit control, or weed invasion). These and other environmental disturbances (Holland & Figgins 2015) could all have disadvantaged weka in the south-eastern South Island at the same time. It may well be that some combination of these factors depressed the productivity of weka below replacement level; and after that, predation by rabbiters and the recently-arrived ferrets could have been the last straw. The observations reported here illustrate the last stages of that doleful process, and help to explain why

nothing was or could be done to save the mainland population of buff weka.

## ACKNOWLEDGEMENTS

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