

KOKAKO (*Callaeas cinerea*) IN THE HUNUA RANGE, AUCKLAND, 1992-1994

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ABSTRACT

Five surveys for the North Island Kokako were carried out in the Hunua Range, Auckland between October 1992 and March 1994. Twenty six- 28 Kokako were recorded, including 3 possibly 4 pairs. Results suggest that there has been a decline in Kokako numbers since the previous survey in 1986-1988. All Kokako were recorded in tawa-podocarp forest. The birds ranged in altitude between 320m and 640m. Birds were distributed in the following catchments: Mangatangi (13 birds), Mangatawhiri (12 birds), Orere (2 birds), Tapapakanga (1 bird). Nearly all records (65%) were of birds heard rather than seen. Two pairs were seen.

KEYWORDS: Kokako, *Callaeas cinerea*, population survey, Hunua Range, Auckland

INTRODUCTION

Classified as endangered (Bell 1986), the North Island Kokako (*Callaeas cinerea wilsoni*) is widely distributed in the northern half of the North Island, mostly in small, isolated populations (Rasch 1991). In the Auckland region, over 100 birds are present on Little Barrier Island (P. Jansen pers. comm.), arising from a population of 32 birds translocated from Rotorua (Brown 1989).

Between 250-300 Kokako were estimated in the Hunua Range in 1957, but numbers dropped to 60-70 birds by 1972 and 40 birds by 1988 (MacMillan & McClure 1990). The decline of Kokako in the Hunua Range, as elsewhere in New Zealand, has been partly attributed to the effects of habitat loss and introduced predators, particularly the ship rat (*Rattus rattus*), and possum (*Trichosurus vulpecula*) (J. Innes, pers comm.).

The last published survey of Kokako in the Hunua Range was undertaken in 1986 - 1987 by MacMillan & McClure (1990). The Auckland Regional Council Parks Service has since conducted 5 more surveys over a period of 3 years from 1992 to 1994.

STUDY AREA AND METHODS

The Hunua Range is located 40 km south-east of Auckland City, on the southern boundary of the Auckland Region (Figure 1) and is administered by the Auckland Regional Council Parks Service. Native forest (excluding shrubland) covers about 60% of the 19 719 ha range (Anon 1994, MacMillan & McClure 1990). The vegetation is predominantly tawa (*Beilschmiedia tarwa*),

and taraire (*B. tarairi*) – , or tawa and kohekohe (*Dysoxylum spectabile*) – , dominated forest. Areas of rimu (*Dacrydium cupressinum*), hard beech (*Nothofagus truncata*), and kauri (*Agathis australis*)-dominated forest occur as well as submontane forest (Barton 1989). Five walk-through surveys were undertaken using survey methodology similar to that employed by MacMillan and McClure (1990), with some modifications based on Rasch (1991). Observers worked in pairs or small groups, with one person per group experienced in kokako-surveying. In total, about 75 volunteers were involved in the surveys.

Two surveys were undertaken on consecutive mornings between dawn and 11:00 hours from a series of listening posts spaced 200-300m apart along ridges. If Kokako were not heard singing after 5 minutes passive listening, a call sequence was played over a hand-held tape recorder. The taped call was of the Hunua dialect recorded by J.L. Kendrick during the 1970's (C.R. Veitch, pers. comm.), and that used by MacMillan & McClure (1990). The call sequence was 3 mew calls, followed by a 5 minute listening period, then 3 mew calls, followed by a 5 minute listening period, then 30 seconds of long song, followed by a 5 minute listening period.

Observers recorded the grid reference of their own location, and the compass bearing and estimated distance to any kokako heard. From this information, approximate locations of birds were plotted on a map. To enable comparisons between surveys, Kokako heard within the same areas between years were counted as one record. Most records were based on one day's observation by experienced observers only. The remaining were isolated records by experienced observers.

RESULTS

Survey 1, 4-5 April 1992 The Kohukohunui Track, Workman Track, Goss Track and Pukapuka Track were surveyed and 5 Kokako were recorded.

Survey 2, 31 October - 1 November 1992 Sixteen Kokako were recorded from the Kohukohunui Track.

Survey 3, 27 April - 3 March 1993 The Mangatangi Ridge, Kohukohunui Track, Pukapuka Track and Goss Track were surveyed and 15 Kokako were recorded.

Survey 4, 31 October - 1 November 1993 The Kohukohunui Track, Sharps Track, Goss Track and Pukapuka Track were surveyed and 9 or 10 Kokako were recorded. At least 3 additional birds were heard in the direction of the adjacent Cashmore block, but the song was too faint to record exact locations.

Survey 5, 22 - 26 March 1994 The Mangatangi and Mangatawhiri ridges were surveyed and two birds were recorded. The Goss Track was surveyed on 17 April 1994 and two birds were recorded.

Corrections to MacMillan & McClure (1990) Note that bird 18 or 19 located by MacMillan & McClure (1990) was incorrectly recorded on grid reference NZMS 260 S12 069 578, and should be recorded on 055 585. In addition, birds pair 15/16 and 17 were incorrectly recorded on 078 593 and 083 593, and should be recorded on 068 592 and 073 593 respectively (from original data sheets, 18 April 1987). Birds 31 and 32 in MacMillan & McClure

(1990) are in the Mangatangi catchment, not the Mangatawhiri, changing the number of birds surveyed in each catchment to Mangatangi (22 birds) and Mangatawhiri (10). Bird 35 was never directly recorded by MacMillan & McClure (1990), and may have been a tui mistaken for a Kokako (B. McClure pers. comm.).

Detailed records and grid references are held by the Auckland Regional Council Parks Service and can be obtained from the author. First records of birds are shown in Figure 2.

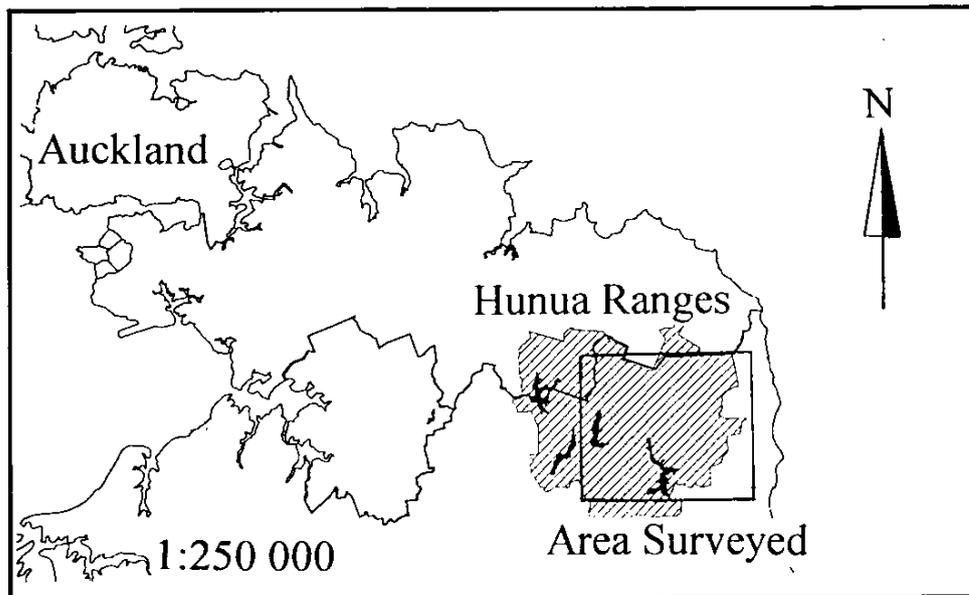


FIGURE 1 – Location of the Hunua Ranges and the area surveyed.

DISCUSSION

During the survey, a total of 26 - 28 Kokako were recorded, including 3 or 4 pairs. Kokako were distributed in the following catchments: Mangatangi (12 birds), Mangatawhiri (13 birds), Orere (2 birds), Tapapakanga (1 bird). Of the 28 birds recorded, 20 (71%) were in tawa-podocarp forest, and 8 (28%) were in tawa-podocarp-*Quintinia* forest association, over 600m above sea level. Ten Kokako (35%) were seen, including one pair at Pukapuka and one or two pairs near Kohukohunui Track.

Examples of errors that could have arisen during the survey are described by Meenken *et al.* (1994). Territories were missed on mornings when no birds called. However, most records on the Kohukohunui Track were collected on one day in October 1992. The number of birds may also have been underestimated if territories were closely spaced. Location error is the most likely source of error because only a minority of birds were seen. This would have underestimated the number of pairs by being counted as two singles. The number of singles may have been overestimated by being counted twice by different observers as the bird moved the length of its territory.

Results suggest that 17 - 19 (47 %) of the Kokako territories recorded by MacMillan & McClure (1990) in 1986-1988 were relocated, including the

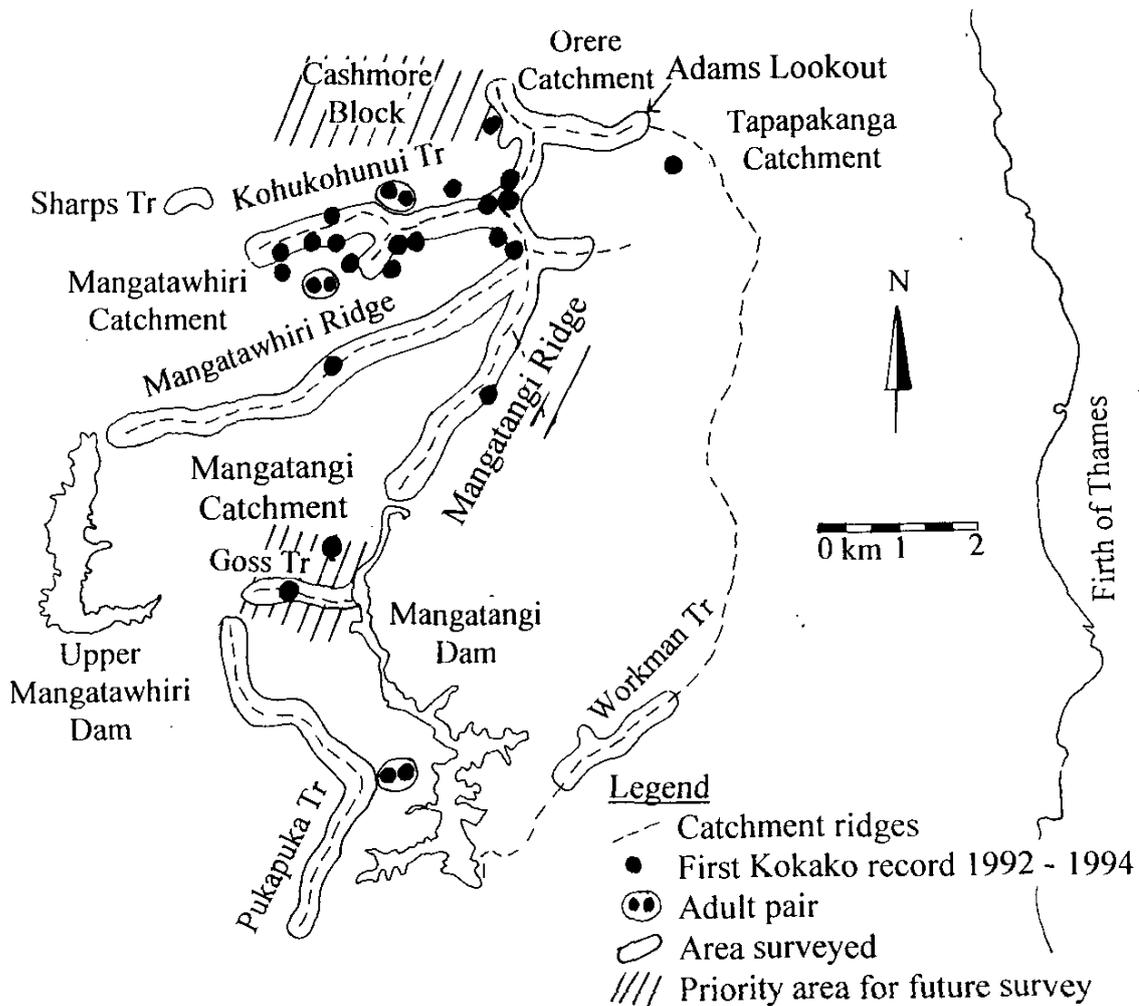


FIGURE 2 – Map of the area surveyed in the Hunua Range, 1992 - 1994, showing the distribution of Kokako.

territories of 2 pairs. Nine Kokako were recorded in areas where MacMillan & McClure (1990) surveyed but did not record birds. One was recorded on Pukapuka Track in 1992. Four single adult birds and a pair were located on the Kohukohunui Track. One bird was located in the Tapapakanga catchment, heard from the Adams Lookout. One bird was recorded at Goss Track.

The new Kokako territories recorded may have always been there, but just not recorded by MacMillan & McClure (1990). In the October 1993 survey, for example, despite good weather conditions on the lower Kohukohunui Track, only 70% of previously recorded birds were relocated. This result is consistent with the success rate of the survey methodology, which was found to locate 64 - 75% of the resident territorial birds in the King Country, confirmed afterwards by territory mapping (Rasch 1991). Alternatively, losses to the population could have been balanced by successful breeding, or birds may have shifted territories.

While fewer Kokako were recorded than by MacMillan & McClure (1990), this does not necessarily mean a net decrease in the number of birds.

Weather conditions for some areas during 1992-1994 were less than ideal and, in addition, not all areas previously surveyed were re-surveyed.

MacMillan & McClure (1990) recorded 15 birds from Sharps Track to the Kohukohunui summit. In this survey, 11 birds were recorded within the same area, including 4 birds and a pair in areas not previously recorded by MacMillan & McClure (1990). Assuming observer effort was similar, and that Kokako do not move territories over large distances between years, results suggest that overall there has been a decline in the number of Kokako.

Twenty-one (75%) of the 28 Kokako recorded between 1992 and 1994 in the Hunua Range were near the Kohukohunui Track and adjacent ridge system where the majority of sightings have been made in the past 25 years (MacMillan & McClure 1990). The concentration of survey effort on the Kohukohunui Track as a survey area has biased results. Higher Kokako concentrations may be found elsewhere in good habitat with an increase in survey effort. Additional surveys are needed, particularly on the Mangatangi Ridge, and Goss Track area, in the Tapapakanga catchment and Cashmore Block.

The distribution of Kokako in the Hunua Range is a direct reflection of specific habitat requirements, particularly the abundance of preferred food tree species. Barton (1990) related the food preferences of Kokako in the Hunua Range based on previous studies (St Paul 1966, Fitzgerald 1984 and Powlesland 1987). Very highly preferred food species which are frequent or abundant in the Hunua Range include coprosma (*Coprosma grandifolia*) and rewarewa (*Knighitea excelsa*) (Barton 1990). Highly preferred food species include tawa, pigeonwood (*Hedycarya arborea*), red mapou (*Myrsine australis*), supplejack (*Ripogonumscandens*), nikau palm (*Rhopalostylis sapida*), pate (*Schefflera digitata*) and heketara (*Olearia rami*) (Barton 1990). All but the last three tree species are frequent to common in the Kohukohunui Track area (Barton 1990).

Very highly preferred and highly preferred food species are most commonly found at an altitude of 250m to 600m. Kohekohe and tawa are common in mid altitude (250m to 600m) and tawa is rare below 100m altitude. Supplejack is uncommon below 200m altitude (Barton 1989). This correlates directly with Kokako distribution. The Kokako located in this survey ranged in altitude from 320 to 620m, with an average of 495m for first records.

The number of Kokako breeding pairs in the Hunua Range is low. One or two of the pairs recorded in this study were new records for areas previously surveyed. Only one juvenile was seen in 1987 (MacMillan and McClure 1991), and none were identified during these surveys, despite three surveys being in autumn when juvenile Kokako feed with their parents in the parents' territory. A low fledging rate is typical of Kokako in other mainland forests (Meenken *et al.* 1994). The low number of pairs (and presumably females) combined with a low breeding rate means that rate of recovery (if any) will be slow. The death of any breeding female will also severely reduce the rate – or even preclude the possibility – of population recovery. Without intervention, the long term viability of the population will continue to decline.

ACKNOWLEDGEMENTS

I would like to thank the members of the Auckland and South Auckland Ornithological Society, and staff from the Auckland Regional Council Parks Service, Department of Conservation and University of Auckland, as well as all those private individuals who volunteered their time and braved cold mornings and basic accommodation to assist with the surveys; also to the Hunua Park Rangers, particularly Peter Rowberry and John Andrews for looking after the safety aspects of the survey. Special thanks to David Lawrie, Brian MacClure, Tony Harbracken and Kerry Walsh for single-handedly finding Kokako in obscure areas. Comments by Brian Gill and John Dowding on an earlier draft of this paper were appreciated. John Innes and Edward Minot provided constructive comments on the final draft.

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Received 30 Sept 1994, revised 18 Dec 1994, accepted 24 Dec 1994