ORUAWHARO MEDLANDS ECOVISION

The OME Kaka Count 2024

"More than there used to be"

With thanks to Peter Edmonds!

Report prepared by John Ogden on behalf of OME, December 2024.

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Introduction

Kaka are present at Medlands all year, but are more numerous and conspicuous from late September until April. The purpose of the current monitoring was to establish a 'baseline' figure for the Medlands area by methods comparable to those used in the earlier 2007 – 2011 counts made at many locations throughout the Island. December was chosen as the counting month because those counts showed markedly higher numbers during December compared with 'winter' months (June, July and September). Also, bird counts have been made in December from 2008 to 2018 at Windy Hill Sanctuary (Fig 44 in "Birds of Aotea") so that these data also become available for comparison.

Methodological considerations

Kaka are noisy and conspicuous, often in small flocks, and very mobile. This presents several sampling problems. In particular, observers at different sites in any given location (eg. 'Medlands') might be counting the same birds as they move about. This problem can be partially alleviated by making sure everyone counts at the same time, and keeping the counting period short. However, making it very short (eg.the standard 5 minutes) increases between location and between count variance, so that more replication is required. The protocol adopted in 2007 was to have a few scattered observers at different sites throughout any 'location', and to make observation over the same 30 minutes at all sample sites. In those earlier counts the locations were widely separated so that kaka movement between them during the brief count period was considered unlikely. Only two 'replications', one count in the morning and another in the evening, were employed. The minimum number of birds present in a location was taken as the largest number actually counted *together* at a site in that location, *or thought to be separate individuals*, by any observer at that location. That is – there were *at least that number* present. The possible maximum is the sum of all observer's counts at the different sites within a location in the sampling period – thus assuming that *all birds counted were separate individuals*. The maximum count probably over-estimates the number present, while the minimum may be largely a function of family or flock size, and is likely to underestimate numbers actually present at the location.   The numerical average of maxima and minima for a site, is simply a compromise between these counts, but can be summed across sites to give a total for the location which may be nearer the true number at the location than either minima or maxima. Total count simply sums maxima for separate half-hour periods and is an index of abundance rather than an estimate of population size.

The 2024 Count at Medlands

Seven locations were chosen to cover the medlands area. Three of these (3, 4 & 7) are to the west of Medland Rd. and should observe birds moving from the nearby bush covered slopes,

while the remainder are to the east of the road and sample the beach settlement houses and gardens.

Table 1. Sample locations and personnel.

Location	Loc. No.	Observer
11 Greenside Rd.	1	Graham Cleary & Brock
67 Sandhills Rd.	2	Raoul Stuart
501 Medland Rd.	3	Lotte McIntyre
64 Mason Rd.	4	Kim Bannister & Frances McLure
5B Oruawharo Ln.	5	John & Jenni Ogden
157A Sandhills Rd.	6	Jennifer Neads
619 Medland Rd.	7	Annamarie Clough

Timing

Due to heavy rain on the morning of December 12th, the count was largely abandoned. However, the evening count was completed as planned (7.0 – 7.30PM) and a morning count made on the 13th (7.30 – 8.0AM) at 6 locations. The weather on both these occasions was overcast with low cloud.

Results

The data are given in Appendix 1. Fig 1. Gives a summary of the various estimates. The smallest (absolute minimum) is the largest number of birds at *any one of the sites* thought to be definitely different individuals. This figure (10) must underestimate the total population present as it is inconceivable that only ten birds were moving about to appear at all sites almost simultaneously! The sum of minima assumes only the minimum thought to be different individuals (or clearly seen as discrete) at each site were different birds, while the maximum assumes that all birds recorded, seen or heard, were different individuals. As kaka were seen flying between locations during the counting period this maximum is certainly too high. The true number (at that time on that day) presumably lies between the sum of minima and sum of maxima, indicated by the averages in Fig 1. Thus, we can be fairly confident that the true figure is between 24 and 54, and probably between 30 – 40. The two averages are close: 38 and 39, but note that site 7 was recorded only on the PM count.

Birds were observed moving from the bush-clad slopes to the coastal settlement, perhaps to feed on the pohutukawa which was just starting to flower in abundance. Nest sites are only known in the forested slopes.

There was a marked difference between the broad averages between the inland three counts (sites 3 and 4), and the sites located on the coastal strip (Sandhills Rd. etc, sites 1,2,5,6). The former gave 11±6 (mean ± standard deviation) while the latter was 4±3. These numbers indicate kaka's general preference for bush areas. Movement to the coastal garden areas appeared to be to visit flowering Pohutukawa and/or flowering and fruiting Puriri trees.
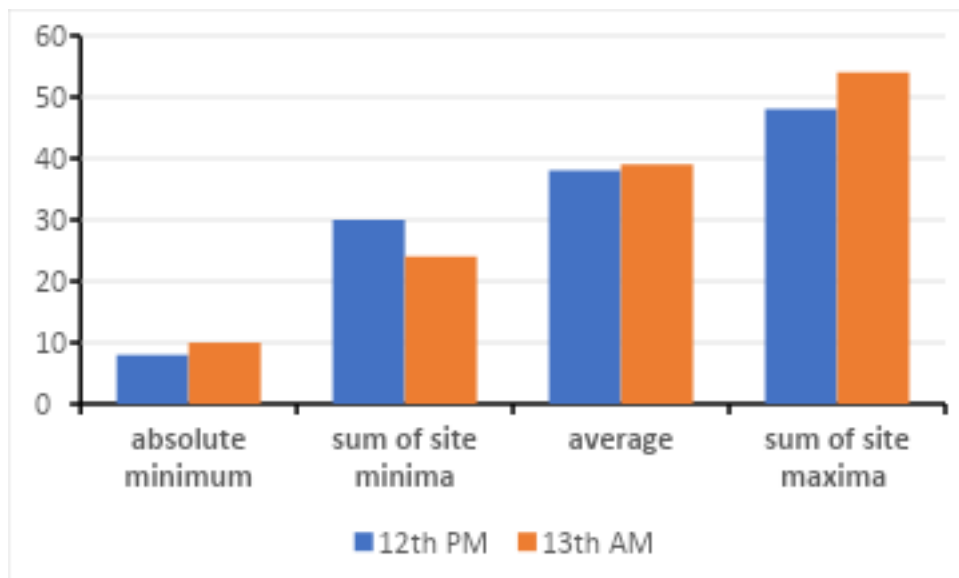
Fig 1. Estimates of kaka numbers present in the Medland area in December 2024.

Table 2. Data in Fig 1.

Date in December	Absolute minimum	Sum of site minima	Average	Sum of site maxima
12th PM	8	30	38	48
13th AM	10	24	39	54

Discussion

The earlier GBIET kaka count data were summarised in Ogden 2011, and in Fig.42 in "Birds of Aotea" 2022. The separate location counts are given in tables in Environmental News #13 (2007); #16 (2008); #23(2010); #24 (2010, plus summary). These results, when compared with other data, established the off-island movement of about half the kaka population between April and late September. However, the minima reported in the earlier data were to be summed across locations for an island-wide absolute minimum figure, and a strict minimum equivalent to the absolute minimum in Table 2 was applied at each location. It was concluded (2011) that the summer breeding population on Aotea was 200-300 birds, reducing to 75 – 175 in the winter months. In 2022 ("Birds of Aotea") this was upgraded and simplified to 100 – 400 birds (increasing).

The results from Medlands are summarised in Table 3. The 2007 minimum results appear anomalous, but with that exception the current 2024 results imply an increase in kaka since that date. Kaka counts at Windy Hill Sanctuary from 2008 to 2018 likewise show much variation over the eleven years (with a low in 2010 as at Medlands) but an overall increasing trend. This is backed up by other counts at Windy Hill in May in 2000, 2011 and 2021, which

show a significant increase in kaka numbers over those 20 years (Ogden 2021; see also "Birds of Aotea", 2022).

Table 3. Earlier kaka counts using the same methodology at Medlands. Extracted from data in Environmental News #13 (Dec 2007 data); #16 (early Sept. 2008); #24 (Dec.2010).

Year	Month	Absolute minimum	Total count = Absolute maximum	Average estimate
2007	Dec	18	29	23.5
2008	Sept	6	25	15.5
2010	Dec	6	12	9
2024	Dec	10	54	32

These data and anecdotal evidence all indicate that the kaka population on Great Barrier/Aotea has been increasing for the last decade or two. It may now be getting to a level where competition for nesting sites in tree hollows will limit the population. There is photographic documentation of kaka using the same nesting burrows as black petrel, and other indications of a nest-site shortage. Winter food supplies may also be limiting, especially as pines are eliminated as an unwanted weed tree.

Monitoring protocol considerations

As this is the first of a planned monitoring program some points relevant for the procedure in future need noting. (1) increasing the number of counting points will add to the problem of assessing the same birds more than once as they move about; (2) an agreed process for determining minimum of different birds seen at a site would be helpful; (3) a follow-up meeting to discuss these problems will be helpful. In my view a total re-organisation of the method would not be helpful unless it allows comparison with earlier or other data sets.

APPENDIX. Summarised data from 7 sites (see also Table 1)

Loc	Max/min	12th PM	13th AM	Other data	trees visited
1	max	0	0		
1	min	0	0		
1	avg	0	0	2 often	
2	max	5	4		pines
2	min	5	4		
2	avg	5	4		
3	max	16	22		
3	min	6	10		pine, gums, orchard
3	avg	11	16		
4	max	11	15	12th AM, 3 seen, 17 hd,	gum, puriri, kahikatea.
4	min	6	5	c. 10 avg, 11 unique birds 12th PM	
4	avg	8	10		
5	max	7	12	12th AM Rain n=0	Pohutukawa
5	min	4	4	norm = 3 - 5	
5	avg	5	8		
6	max	1	1		
6	min	1	1		
6	avg	1	1		
7	max	8			
7	min	8			
7	avg	8			
	SUM MAX	48	54		
	SUM MIN	30	24		
	SUM AVG	38	39		