

KERERU NEWS No. 53 (24 April 2006)

1. A couple of recently published papers that may be of interest

Gill, B.J. 2006. Post-mortem examination of New Zealand pigeons (*Hemiphaga novaeseelandiae*) from the Auckland area. *New Zealand Journal of Zoology* 33: 31-37.

Abstract: In a large sample of New Zealand pigeons found dead in the wider Auckland region, the sex ratio was 1.7:1 in favour of females. Adult males had slightly but significantly shorter bills and longer wings than females, but there was no significant difference between the sexes for tarsus and tail length. Adults weighed 420-780 g, with an average of 638 g for males and 596 g for females (not significantly different). There was little seasonal variation in weight, but fat score was highest on average in autumn and lowest in summer. In adults, testes were often enlarged from September to February with a peak in October, and ovaries were often enlarged from August to January, suggesting that birds laid their eggs between August-September and January-February. This breeding period is long but still seasonal. There was a long season of primary moult (October-May) with a post-breeding peak (February-April), and an absence of moult in winter. Tail moult was confined to late summer and autumn (February-April).

Morgan, D.; Waas, J.R.; Innes, J. 2006. The relative importance of Australian magpies (*Gymnorhina tibicen*) as nest predators of rural birds in New Zealand. *New Zealand Journal of Zoology* 33: 17-29.

Abstract: Australian magpies have been recorded as predators at nests of other birds in New Zealand but their importance as a predator in rural areas, where they are most common, has not been previously quantified. We continuously monitored 38 nests of seven species in rural areas over two successive breeding seasons using time-lapse video recording to determine the proportion that were preyed on by magpies compared to other animals in the ecosystem. Twenty-two lethal events were recorded over the two breeding seasons: magpies were responsible for only one of these. A further eight scavenging events were also recorded; magpies were not responsible for any of these. Harriers, ship rats, and cats were the main predators and were responsible for 36, 32, and 23% of lethal events respectively. A pukeko was also recorded preying on nest contents on one occasion. Other known nest predators such as Norway rats, possums, hedgehogs and ruru did not appear in any frame although present in the study areas. Our results suggest that magpies are not serious nest predators in rural areas in comparison to ship rats, cats and harriers, and that controlling magpies in rural areas will not significantly improve the nesting success of other birds.

2. The continuing story of a kereru pair, Bubs and her mate, of Otatara, Invercargill - John Henderson, Les Moran & Ralph Powlesland

This pair has recently completed its fourth nesting attempt of the season. They started their first nesting effort in September, and fledged the resultant chick on 10 November. They started their second nest about a month later, and we set up a time-lapse video camera at it to monitor activities. The chick hatched but while the male was brooding the chick on its third day a harrier arrived down through the sparse foliage above the nest; the male kereru departed very quickly of course, and the chick was no more. Within 10 days the kereru pair were incubating an egg on a very flimsy nest. Unfortunately, we didn't have the camera set up to monitor activities at this nest, but within a few days the egg was found broken on the ground below the nest, presumably because the nest was inadequate and/or windy weather made it unstable.

A few days after the failure of their third attempt the pair were again nesting building. This time we managed to get the video camera set up that same day while the kereru were absent in the late

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afternoon. A ship rat ran over the nest that night, and again two nights later. Bubs, the female, arrived at the nest at 8.24 pm on 30 Jan, and 26 minutes later the egg was laid; about an hour before dusk. It wasn't until 5 nights later that the rat returned, evident from the eye shine at the far side of the nest from the camera on a branch by the nest. The female, who seemed to be asleep beforehand, immediately became alert, head raised, flicked out both wings and puffed out her plumage. She held this pose for a while, and then repeated the wing-flicking procedure twice more, during which the rat disappeared. The rat didn't return. On 19 occasions during incubation by day the male or female left the nest without being in an alert posture (as though a predator or intruding kereru was nearby). They were absent for a mean of 14 minutes, the longest being for 46 minutes. Despite these absences the chick hatched. We can't tell exactly when it hatched, and assume it happened about midway between 7 pm when the female started her stint (egg present) and midday the next day when she was relieved by her mate (chick present). That gives an incubation period of 26.3 days, a bit shorter than previously determined (27-30 days). The chick fledged 40 days after hatching, which is a fairly typical age for a kereru chick to leave the nest (30-45 days).

3. Kereru fact sheet

The DOC fact sheet on the kereru has been up-dated. For those of you in DOC it can be accessed at chcro-78956. It is not available via the doc website (www.doc.govt.nz) yet but I'll let you know when it is.

4. Kereru nest monitoring at Nga Manu, Waikanae - Bruce Benseman

Peter McKenzie and David Mudge have been setting up photo sites in order to monitor for nest predations in Nga Manu Nature Reserve. Several tui, fantail and kereru nest sites were monitored. The only sign of predation recorded was a morepork predating the young at a fantail nest. The last kereru to fledge was on Saturday April 1st. David and Peter have recorded some excellent digital photos of kereru nest activity from nest building through to fledging of the chick. Anybody interested in their work on nest site predation can contact David or Peter via ngamanu@clear.net.nz

5. White kereru in Southland - Les Moran

From time to time we field reports of white kereru around the south.

Over the last three years several reports have come in from Stewart Island of a white kereru in the vicinity of Horseshoe Bay on Stewart Island. In November 2004 Eamonn Ganley from the DOC Field Centre on the Island photographed the bird. This bird exhibits a lightly coloured head but is otherwise white plumaged.

See jpg attachment: "White kereru. 65KB"

Over a similar period we have heard of another white pigeon that frequents the Whalers Bay area at Sandy Point, Invercargill. This bird's feathering appears to be totally white. Eric and Eleanor Evans photographed this kereru feeding on kowhai leaves at the Coopers Creek settlement at Sandy Point.

See jpg attachment: "White pigeon. 43KB"

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In February 2003 a hunter, Greg James, reported seeing a white kereru, along with a number of other kereru, feeding on broom in the headwaters of the Pourakino River in the Longwoods Range not far from Otautau.



White pigeon3.jpg
(53 KB)



White Kereru 23
Jan 06.jpg (92...

[Note from Ed images didn't come through]

6. Home ranges, breeding success and diet of kereru in Hinewai Reserve, Banks Peninsula - Kirsten Campbell

The Hinewai Reserve study was designed to complement studies carried out in the Diamond Harbour area by acting as a contrasting kereru habitat. Hinewai Reserve, which occupies most of Otanerito Valley and part of Stony Bay Valley, contains the largest continuous fragment of native forest on Banks Peninsula and is relatively less modified than the Diamond Harbour area. Results from this study are being compared with results from the Diamond Harbour area (Schotborgh, unpublished).

Fifteen kereru were caught in Hinewai Reserve during February and April 2005. Department of Conservation staff assisted with the capture of kereru and fitted radio transmitters and coloured leg tags. Radio-tagged kereru were tracked and observed regularly over a 12-month period. Three resident kereru of Akaroa were visiting the reserve when captured and returned to Akaroa soon after capture. These kereru are not included in the following results because of the similarity of Akaroa to the Diamond Harbour study site.

Feeding Results

Food species and plant parts eaten were recorded while observing kereru. Figure 1 shows a list of food species and plant parts eaten by kereru over a 12-month period. Broom, tree lucerne, kowhai, kawakawa, mahoe, ngaio, pigeonwood, poroporo and rohutu were relatively more important as food sources than other species listed.

Use of fruit by kereru was highest over summer and autumn and lowest during winter and spring. Mostly fruit was eaten between February and May. All fruit consumed by Hinewai kereru was of native species. Between July and December only leaves and flowers were eaten. During winter leaves of kowhai, pohuehue, broom and tree lucerne were eaten until new leaves of broom, tree lucerne and willow became available in spring. Flowers of broom, tree lucerne and kowhai were eaten when available (Figures 1 & 2). The new leaves and flowers of broom were preferred over new growth of kowhai.

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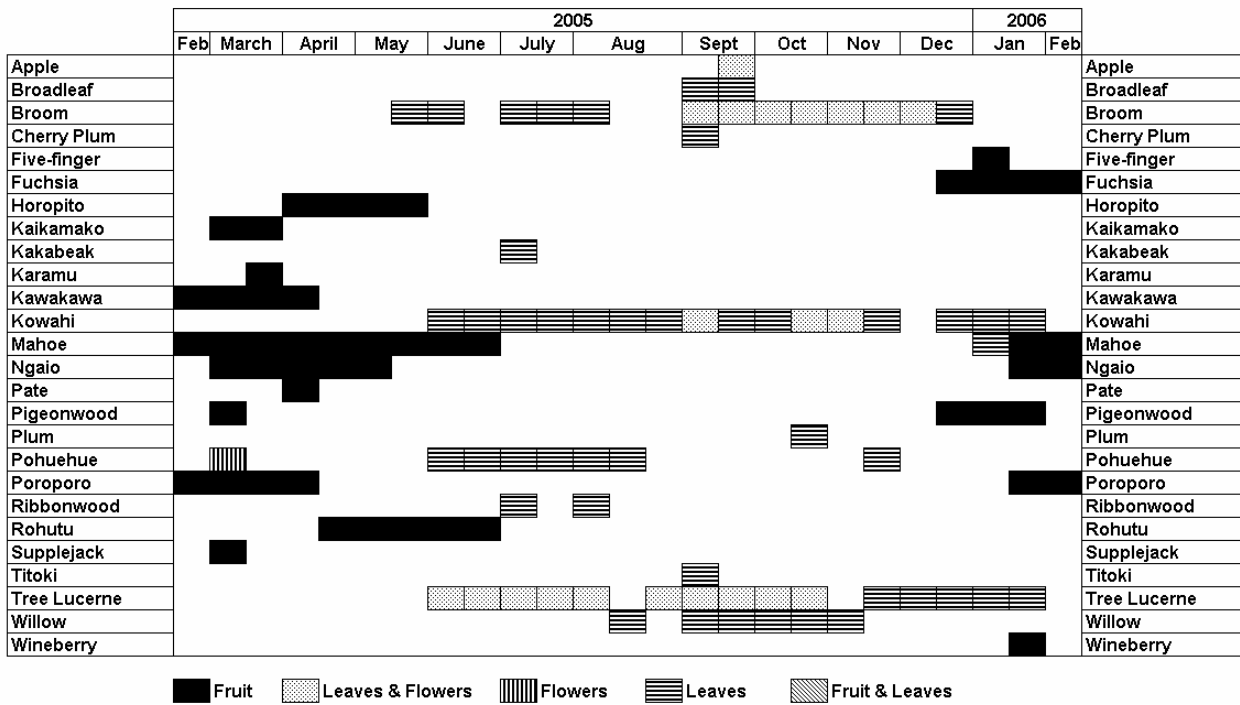


Figure 1: Species and plant parts eaten

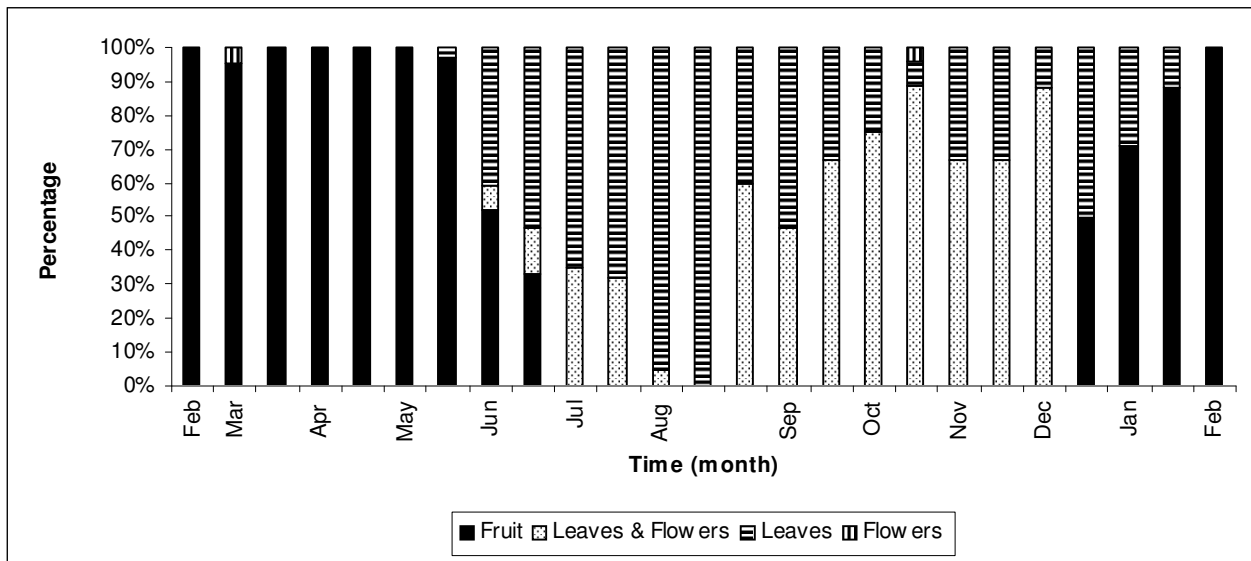


Figure 2: Percentage of plant parts eaten over a 12-month period

Breeding and Mortality

Kereru began nesting in August 2005 and were still breeding when the study finished in February 2006. The peak of the breeding season was over summer. Twelve nesting attempts were made; five made it through to the chick stage but only two nests successfully fledged chicks. The remaining seven nests failed at the egg stage. Only one sign of predation on an egg was detected but it is likely that most of these nests failed due to predation.

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Two tagged kereru were found dead during June and July. Stoats or cats had eaten the carcasses; these kereru could have been killed or died natural deaths and been scavenged.

Home Range Sizes

Table 1 Home ranges areas

Kereru no.	<i>n</i>	Total area (ha)	Home Range (ha)
40	91	52	6
42	95	464	28
44	112	71	10
46	113	112	10
48	103	103	20
50	87	28	7
52	90	182	45
54	84	69	28
56	89	82	8
58	130	124	18
60*	54	20	2
62	85	499	40
64	117	75	32
66	79	183	15
68*	48	102	10

* 60 and 68 were found dead

n = number of location fixes collected for each kereru over the study period

Total area = the entire area over which each kereru travelled

95% HR = home range calculated using 95% of all the locations for each kereru – excludes outlying locations that are not normally visited and areas that are not used.

Table 1 shows the total area over which kereru travelled and the size of their home range within this area.

No tagged kereru in the Hinewai Reserve study site made excursions greater than 5 km. One resident of Otanerito Valley made a trip from the bottom to the top of the valley and returned to its original location within two weeks. Another kereru, a resident of Sleepy Bay, made trips to Stony Bay (<3 km) on a daily basis during the last two weeks of the study period. It is interesting to note that none of the tagged residents of Otanerito Valley left the valley during the study period. Home range sizes of kereru in the Hinewai Reserve study site were significantly larger than for kereru in the Diamond Harbour study site (Schotborgh, unpublished) (t-test, $P=0.0095$).

Schotborgh, H.M. (unpublished) *An analysis of home ranges, movements, foods and breeding of kereru (Hemiphaga novaseelandiae) in a rural-urban landscape on Banks Peninsula, New Zealand*, Unpubl. M.Sc. Thesis, Lincoln University, Christchurch.