KERERU NEWS No. 41 (15 January 2003)

Hi All,

More information relating to kereru.

1. Monitoring kereru populations - Ralph Powlesland

Here is a list of the studies that I am aware of that have involved monitoring kereru populations.

A. Six Northland forests - Ray Pierce, R. Atkinson & E. Smith.
5-minute bird counts in January 1979 and 1993 at c. 40 stations in each of the following forests - Raetea, Omahuta, Puketi, Waipoua, Mataraua and Russell.

For results see Pierce et al. 1993. Notornis 40: 285-293.

B. Various sites in Northland - Ray Pierce et al.
Sites were Russell Forest, Waipoua Forest, Trounson Park, Bream Head, Puketi Forest & Lady Alice Island. 5-minute counts were carried out in November/December annually, mainly from 1994 or 1995 to 2000. The sites had different levels of pest control, and the results are being written up for publication.

C. Mt Tiger, Whangarei - Ray Pierce.
10-minute vantage point counts, transect counts, and flock counts.

D. Trounson Park, Northland - ?
Six consecutive 10-minute counts were made on 2 days each month in 1995, 1996 and 1997.

For results, see Saunders 2000. A review of DOC mainland restoration projects and recommendations for further action. DOC, Wellington.

E. Trounson Park, Northland - Rodney Lloyd.
Distance sampling in May 2003.

F. Kuaotunu Peninsula, Coromandel Peninsula - Lance Dew.
10-minute counts from 7 vantage points; weekly observations from December 2002 to February 2003.

G. Mapara Forest, Waikato - Ian Flux.
Counts of kereru feeding on willow buds and new leaves were obtained during spring of each year from 1992 to 2000.

H. Pureora Forest, Waikato - Hazel Speed.
5-minute counts for kereru were carried out in the Waipapa Ecological Area (mammalian pests were controlled to low levels), and at Waimanoa (occasional aerial 1080 operation) at stations 300 m apart. Counts were made annually in summer from 1997 to 2001.

I. Pureora Forest, Waikato - Terry Greene.
Distance sampling at 131 points in the Waipapa Ecological Area in October 2000 & 2001, and March 2001 & 2002.

For initial results, see Kereru News no. 26.

J. Parapara Road, Wanganui - Astrid van Meeuwen - Dijkgraaf
Transect counts while driving slowly along 15.7 km of section of state highway 4. One count each day from 1 to 14 September each year from 1991 to 2003, but excluding 1998 and 1999.

For results, see Kereru News no. 40.

K. Boundary Stream (intensive mammal control) & Cashes Bush (no control), Hawkes Bay - Wendy Sullivan.
Distance sampling at Boundary Stream along 4 transects, each with 10 points at 200 m intervals, and at Cashes Bush along 2 transects, each with 10 points. Observations carried out in spring 2002, and autumn 2003.

For results, see Kereru News no. 39.

L. Kapiti Island, Wellington - Raewyn Empson & Colin Miskelly.
5-minute counts in July, October and January 1991-94, and in July & October 1996 and January 1997 to assess the impact of aerial broadcasting of brodifacoum baits in September and October 1996, on various forest birds, including kereru.

For results, see Empson & Miskelly 1999. NZ J. Ecology 23: 241-254.

M. Pelorus Bridge, Marlborough - Mick Clout, Brian Karl & Jenny Ladley.
5-minute counts each month during 1983-88, and in 2002/03

N. Lake Rotoroa, Marlborough - Mick Clout, Peter Gaze, Rod Hay, & Brian Karl.
Monthly 1.6 km transect count from June 1983 to January 1985.

For results, see Clout et al. 1986. Notornis 33: 37-44.

O. Lake Rotoroa, Nelson - Peter Gaze, Nik Etheridge & Genevieve Taylor.
Replicates the study of Clout et al. 1986. Observations undertaken during most months from December 2000 to April 2003.

P. Lower Heaphy River - Rachel McCellan.
5-minute counts at 47 stations at 200 m intervals during January 2000, 2001 & 2002. Counts at each station done 3-4 times each year.

Results in report, Buller Area Office, Westport.

Q. Windbag Valley, South Westland - Paul van Klink.
5-minute counts, at 50 stations which were at 200 m intervals, carried out in first week of February each year during 1999 - 2002.

See report in Kereru News no. 30.

R. Locations not indicated - Eric Spurr
5-minute counts before and after aerial 1080 operations have been used to assess impacts on bird populations, including kereru. There was no detectable effect of 14 aerial 1080 operations for possum control (9 screened carrot operations, and 5 cereal bait operations) on kereru populations.

See Spurr & Powlesland, 1997, Science for Conservation no 62.

2. Thesis on kereru at Whirinaki - Myfanwy Hill

Reference: Hill, M.T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. MSc thesis, Massey University.

Abstract:
The complex relationship between food availability, nutrient content, diet and feeding behaviour, and how these factors relate to home range and movement of kereru, was examined at Whirinaki Forest between 1999 and 2001.

The phenology of 11 plant species was monitored and the availability of mature and immature fruit and vegetation was measured and considered in relation to climatic factors. Kereru were mist-netted and radio-tagged, then the birds were radio-tracked and observations on diet, feeding ecology and location were made. The spacing and movements of kereru within Whirinaki Forest were examined, and home ranges calculated for 18 radio-tagged individuals. Six species of fruit and two species of leaf consumed by kereru were analysed to determine their nutrient content and physical composition.

Phenology results showed two main fruiting groups, which fruited in summer and autumn. At different times of year, the most important species to kereru in Whirinaki appear to be miro, tawa, makomako and kowhai. Miro and tawa were clearly preferred fruit in autumn and summer respectively. Kereru specialised on these species, but behaved as generalist feeders when the ripe fruit of preferred species was not readily available. Diet was related to the habitat in which the kereru foraged, and the accessibility of trees in the forest and food on the trees is likely the main force behind many aspects of feeding ecology. The results from nutrient analysis are consistent with a view that there has been some co-evolution of kereru and the nutritional value of their significant food species. The species that contain the necessary nutrients for differing seasonal requirements are species sought after by kereru. Diet, forest composition and habitat most likely had an influence on range size.

The RANGES V computer package (Kenward 1996) was used to analyse the home ranges of 18 kereru. The mean home range was 163.2 ha (SE = 43.4), with a minimum of 13.9 ha and a maximum of 704.2 ha. Twelve kereru had a continuous home range and six had a home range consisting of two clusters. Some kereru with one home range showed repeated movements out of this range, but did not spend a significant amount of time in the new location and returned to their home range frequently. Cluster analysis prevented these sporadic movements from being included in the analysis. The kereru with two home range clusters spent periods of 2 to 12 months in each cluster. The distances between these areas ranged from 2 to 16 km.

3. Wanted: volunteers for the Pink Pigeon project on Mauritius - Dave Wills

We are very short of volunteers for the Pink Pigeon project at the moment. If you would like to get involved or you know of anyone who wants to come to Mauritius for 6 months as a volunteer I would be very glad to hear from you/them. Volunteers would have to pay their own airfare and food (living costs about NZ$360.00 a month includes some eating out and entertainment); accommodation and transport provided. We have 26 people here at the moment from 10 different countries ranging in age from 22 to 36, so there is an incredible diversity of ideas and personalities. Those interested should contact me via *davespigeon@hotmail.com*

4. Invercargill kereru fly to Stewart Island - Les Moran, Kiri Pullen & Ralph Powlesland

During October-November 2003, 10 kereru were mist-netted and radio-tagged in Invercargill. The birds remained fairly close to their capture locations for the next 6 weeks, and none of them showed signs of nesting. Then about mid-December, the odd kereru moved a few kilometres within Invercargill, and later four disappeared. Extensive searching about Southland using scanning recievers from vehicles failed to locate any of the missing birds. At Christmas time Kiri

went over to Stewart Island to visit family, and by radio-tracking from a hill-top near Halfmoon Bay managed to receive signals from two of the missing birds, a male and a female. Their general locations put them about 60 km from their capture locations in Invercargill. The female is still on Stewart Island at this time, but the male returned to Invercargill within a few days. The latter invariably kept company with a radio-tagged female about the capture location and so we surmise he returned because his mate had remained in Invercargill. One of the other two missing birds has reappeared at its general capture location, but the fourth is still not located. We wonder if the kereru go to Stewart Island to nest because their movement to there has coincided with a pair starting nesting at Dunsdale, Southland.