

KERERU NEWS No. 60 (26 October 2007)

Information about and observations of kereru / kuku / kukupa / kokopa / parea

1. Agnostic behaviour and sunbathing of kereru – Karin Wiley

Further to information about agnostic behaviour of kereru in the previous Kereru News, here are a few additional observations. Three years ago I rehabilitated a juvenile kereru from Greytown that had a soft tissue injury to one wing. The injury was moderately severe and it was unknown whether the bird would cope back in the wild. While the bird was in a small aviary, it was visited every day by a wild kereru. It was decided to release the injured bird at my property in Ngaio so that it have access to food supplements while it strengthened the injured wing and gained fitness. This decision was made because the kereru was very friendly (it showed no fear of me, was happy to be handled, would sit on my hand, head or shoulder, and would come when called). Once released, the tame kereru was joined by the wild kereru, and they would feed together. However, the wild kereru would coo loudly whenever it saw the tame bird feeding from my hand or sitting on my shoulder. I assumed this call was a warning or alarm coo. These two kereru paired up, flying to and from my garden each day, sunbathed on a roof, and fed on berries about the place. The tame bird flew down to me whenever I appeared regardless of whether I had food to offer or not.

They both disappeared for a number of months and reappeared together in late autumn. I again offered food to the tame kereru and although the wild bird seemed interested, it would not approach me. Eventually it did, and after a few nervous flutters would take food from a bowl that I offered with my outstretched arm. Gradually this bird became more trusting but then started flying at the tame kereru, shooing it away when it flew onto the feeding station I set up for them. This became more and more frequent until the tame kereru disappeared. The aggressive bird came back throughout the winter, gradually gaining confidence to take food from me, stepping up on to my arm and coming to my call. I occasionally saw these two birds in my garden, but the aggressive kereru would shoo off the tame kereru as soon as I appeared. The last time I saw the pair together on my property was 19 May 07 when they flew into a tree next to where I was standing. The tame bird promptly flew on to my head. As this kereru always came into the kitchen while I was preparing food for them, I put her on my shoulder while I cut some fruit and vegetables and took these outside. The aggressive kereru immediately flew at the tame kereru, scaring it away. The aggressive behaviour was always the same; flying directly at the other bird, whacking it with outstretched wings while still in flight, then once the other bird was airborne, chasing it away. I was away for the following 4 days, but the person caring for my birds during this time reported that these two kereru were in my garden on the following two days. The aggressive bird reappeared in late June & then disappeared again late August.

These two kereru did a lot of sunbathing; lying on one side with the upper wing outstretched at the shoulder and tilted back.

Kereru are my most frequent patients, and the ones that are generally successfully released. I had one last year with an old fracture of its femur that was successfully pinned and released. This bird spent months in rehabilitation, so it was wonderful watching it fly off strongly and landing on a branch without difficulty. I think a good number of kereru are attacked by cats and dogs once they are grounded after being concussed after hitting a window. These are the ones that usually do not make it.

2. Kereru nesting at Geraldine again - Jim Jolly

Our Kereru pair have returned to the same lemonwood tree as last year at the corner of our house and begun building a nest in the same place today (18/09/2007). They were perched closely together in the tree at times over the weekend. They are just two weeks later starting to nest than last year, and this must be the fifth or sixth year they have nested around our house - assuming it's the same pair. We feel very privileged!

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Last year they raised a chick at the site. I was able to keep records when I was at home. The three of them were flying around together right through to early February when all three disappeared for a couple of months - some juicy fruit elsewhere no doubt. Only two have been around since. Display flights began at the beginning of September. One flew into our sitting room window last week leaving an impression of spread wing feathers on the glass. It flew off to a nearby tree and sat there for some time but seems to have recovered.

Here are some of the observations from last year's (2006) nesting:

Last week in August: kereru pair frequently in tree by house that became nest

First week September: Pair together at nest site

6 September: Egg first seen

7 September - 1 October: kereru on nest each day

19 September: kereru off nest for half hour, 1 egg

Second week in October: adults off nest more often

16 October: chick first seen

7 November: chick first seen off nest - on branch beside

9 November: chick moved from nest tree to nearby tree (survived overnight storm)

11 November: adult seen feeding chick

13 November: chick moving around in trees beside nest for the last week

17 November: chick/fledgling gone from nest surrounds

Up to early February (2007): 3 kereru seen together flying around property

3. Interesting paper about trying to deter pet cats from catching wildlife

M. Calver, S. Thomas, S. Bradley^a, and H. McCutcheon. 2007. Reducing the rate of predation on wildlife by pet cats: the efficacy and practicability of collar-mounted pounce protectors. *Biological Conservation* 137: 341-348. 2007

In an attempt to provide sound advice to owners seeking to curb the predatory behaviour of their pet cats, we evaluated whether or not the commercial collar-worn product the CatBib reduces the number of vertebrates caught by pet cats. We also tested whether the colour of the CatBib influenced its effectiveness, or if supplementing the CatBib with a bell could reduce predation further. Fifty-six cats identified by their owners as known hunters completed the study, which took place in Perth, Western Australia over a six-week period in November/December 2005 (southern hemisphere late spring/early summer). Each cat spent a period of three weeks wearing a CatBib and three weeks without it and the number of prey brought home during each period was recorded.

Participating cats caught a total of 13 bird species, five mammal species, and 11 herp (reptile and frog) species. The mammal the Southern Brown Bandicoot was the only prey species of conservation concern. CatBibs stopped 81% of cats from catching birds, 45% of cats from catching mammals, and 33% of cats from catching herptofauna. CatBibs of both colours were equally effective at reducing predation. There was no statistically significant evidence that adding bells conferred additional protection. Most cats (86%) adjusted almost immediately to wearing a CatBib, 10% took a day or so and only 4% took longer.

The short version complete with pics of cats wearing pretty coloured bibs:

<http://www.catgoods.com/>

The full paper:

http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6V5X-4NGBB7H-3-1&_cdi=5798&_user=422643&_orig=browse&_coverDate=07%2F31%2F2007&_sk=998629996&_view=c&_wchp=dGLbVzW-zSkzk&_md5=781797648725dc297899e58ac011f0cd&_ie=/sdarticle.pdf

4. Kereru – continuation of where various topics of information about kereru are available, and where the gaps in our knowledge about kereru are (full listing to date at docdm-83720 for DoC staff) – Ralph Powlesland

Distribution

Fossil deposits

- Atkinson, I.A.E. and Millener, P.R. 1991. An ornithological glimpse in New Zealand's pre-human past. *Acta XX Congressus Internationalis Ornithologici*: 129-192.
- Worthy, T.H., and Holdaway, R.N. 2002. Pp. 422-423 *in* The lost world of the moa: prehistoric life of New Zealand. Indiana University Press, Indiana, USA.

Recent distribution

- Higgins, P.J. and Davies, S.J.J.F. 1996. New Zealand pigeon. Pp. 1016-1025 *in* Handbook of Australian, New Zealand and Antarctic Birds. Vol. 3, Snipe to Pigeons. Oxford University Press, Melbourne.
- Bull et al. 1985. The atlas of bird distribution in New Zealand. Ornithological Society of New Zealand, Wellington, New Zealand. Data collected from 1969 to 1979, and shows distribution based on presence/absence in 10,000 yd grid squares, of which 96% of 3675 squares through North, South and Stewart Islands were visited.

Present distribution

- Robertson et al. 2007. Atlas of bird distribution in New Zealand, 1999-2004. Ornithological Society of New Zealand, Wellington, New Zealand. Shows distribution in 10,000 m (10 km) grid squares, of which 96% of 3192 squares through North, South and Stewart Islands were visited. Rather than distribution expressed as presence/absence, as for 1985 atlas, the distribution maps for the 2007 atlas have the data expressed as a level of percentage of the number of record sheets for the grid square where the species/subspecies was recorded; <10%, 10-25%, 26-60%, and >60%.

Populations

Past - descriptions of flocks and harvesting

- Best, E. 1977. Forest lore of the Maori, with methods of snaring, trapping, and preserving birds and rats, uses of berries, roots, fern-root, and forest products, with mythological notes on origins, karakia used etc. Government Printer, Wellington.
- Potts
- Resichek, etc

Present

- Jones, G. 2000. Five-minute bird count surveys. Pp. 66-72 *in*: Beaven, B.; Burns, B.; Harrison, A.; Shaw, P. (Eds), Northern Te Urewera ecosystem restoration project annual report, July 1998 – June 1999. Hawkes Bay Conservancy, Department of Conservation, Gisborne.
- Greene, T. 2003. Distance sampling populations of New Zealand birds – estimating kaka and kereru abundance. DOC Science Poster no. 64, Department of Conservation, Wellington.

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- Stevens, H. 2005. Native birds in forest remnants. Unpubl. PhD thesis, University of Auckland, Auckland.
- Kereru News No. 57 – Kaitoke Regional Park kereru population, 2003-06
- Kereru News No. 50 – Lake Rotoroa kereru population, 1983-85 and 2000-03
- Kereru News No. 41 – list of studies involving monitoring of kereru populations using a variety of methods at many locations.

Long-term monitoring

- The longest study of kereru population numbers that I'm aware of is/was that carried out by Wanganui Conservancy staff along SH4 at the Paraparas each September. This continued from 1991 to at least 2003 (Kereru News No. 40).
- Ideally, further studies are needed that continue for many years to see the extent of annual fluctuations in kereru populations, especially with regard to mammalian pest control regimes, annual variation in fruit abundance, etc.

Home range size and variation seasonally

- Bell, R. 1996. Seed dispersal by kereru (*Hemiphaga novaeseelandiae*) at Wenderholm Regional Park. Unpubl. MSc thesis. University of Auckland, Auckland.
- Campbell, K. 2005. A study of home ranges, movements, diet and habitat use of kereru (*Hemiphaga novaeseelandiae*) in Hinewai Reserve, a large regenerating native forest, Banks Peninsula, New Zealand. Unpubl. MSc thesis, Lincoln University, Christchurch.
- Clout, M.N., Karl, B.J., and Gaze, P.D. 1991. Seasonal movements of New Zealand pigeons from a lowland forest reserve. *Notornis* 38: 37-47.
- Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- Schotborgh, H.M. 2005. An analysis of home ranges, movements, foods and breeding of kereru (*Hemiphaga novaeseelandiae*) in a rural-urban landscape on Banks Peninsula, New Zealand. Unpubl. M.Sc. thesis, Lincoln University, Christchurch.

Movements – daily, seasonal

- Campbell, K. 2005. A study of home ranges, movements, diet and habitat use of kereru (*Hemiphaga novaeseelandiae*) in Hinewai Reserve, a large regenerating native forest, Banks Peninsula, New Zealand. Unpubl. MSc thesis, Lincoln University, Christchurch.
- Clout, M.N., Gaze, P.D., Hay, J.R., and Karl, B.J. 1986. Habitat use and spring movements of New Zealand pigeons at Lake Rotoroa, Nelson Lakes National Park. *Notornis* 33: 37-44.
- Clout, M.N., Karl, B.J., and Gaze, P.D. 1991. Seasonal movements of New Zealand pigeons from a lowland forest reserve. *Notornis* 38: 37-47.
- Harper, G.A. 2003. New Zealand pigeon (kereru: *Hemiphaga novaeseelandiae*) crossing Foveaux Strait. *Notornis* 50: 174-175.
- Heather, B.D. and Robertson, H.A. 2005. New Zealand pigeon (kereru, kukupa, parea). Pages 348-350 in *The Field Guide to the Birds of New Zealand*. Viking (Penguin Books (NZ) Ltd), Auckland.

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- Higgins, P.J. and Davies, S.J.J.F. 1996. New Zealand pigeon. Pp. 1016-1025 in Handbook of Australian, New Zealand and Antarctic Birds. Vol. 3, Snipe to Pigeons. Oxford University Press, Melbourne.
- Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- Schotborgh, H.M. 2005. An analysis of home ranges, movements, foods and breeding of kereru (*Hemiphaga novaeseelandiae*) in a rural-urban landscape on Banks Peninsula, New Zealand. Unpubl. M.Sc. thesis, Lincoln University, Christchurch.

Habitats

- Heather, B.D. and Robertson, H.A. 2005. New Zealand pigeon (kereru, kukupa, parea). Pages 348-350 in The Field Guide to the Birds of New Zealand. Viking (Penguin Books (NZ) Ltd), Auckland.
- Higgins, P.J. and Davies, S.J.J.F. 1996. New Zealand pigeon. Pp. 1016-1025 in Handbook of Australian, New Zealand and Antarctic Birds. Vol. 3, Snipe to Pigeons. Oxford University Press, Melbourne.
- Farmland, exotic plantations, and podocarp/hardwood forest remnants, Northland - Pierce, R.J. and Graham, P.J. 1995. Ecology and breeding biology of kukupa (*Hemiphaga novaeseelandiae*) in Northland. Science & Research Series No. 91. Department of Conservation, Wellington.
- Podocarp/broadleaved forest remnant, Northland - Innes, J.; Nugent, G.; Prime, K.; Spurr, E.B. 2004. Responses of kukupa (*Hemiphaga novaeseelandiae*) and other birds to mammal pest control at Motatau, Northland. New Zealand Journal of Ecology 28: 73-81.
- Podocarp/beech/broadleaved forest, Little Barrier Island - Taylor, J.R. 1996. The impact of human settlement on the kukupa (*Hemiphaga novaeseelandiae*). Unpubl. MSc thesis. University of Auckland, Auckland.
- Coastal broadleaved forest, Auckland - Bell, R. 1996. Seed dispersal by kereru (*Hemiphaga novaeseelandiae*) at Wenderholm Regional Park. Unpubl. MSc thesis. University of Auckland, Auckland; and James, R.E. 1995. Breeding ecology of the New Zealand pigeon at Wenderholm Regional Park. Unpubl. MSc thesis. University of Auckland, Auckland.
- Urban gardens and podocarp/broadleaved forest remnants, Auckland - Karan, A. 1999. Diet of kereru in an urban area: implications for weed dispersal. Unpubl. MSc thesis. University of Auckland, Auckland; and Harwood, H. 2002. Seasonal availability and abundance of tree fruit species utilised by urban kukupa. Unpubl. MSc thesis. School of Environmental & Marine Sciences, Auckland University, Auckland.
- Podocarp/hardwood forest, central North Island - Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- Farmland and forest remnants, Hawkes Bay - Langham, N.D. 1991. The ecology of the kereru or New Zealand pigeon (*Hemiphaga novaeseelandiae*). DSIR Land Resources Contract Report No. 91/45. DSIR Land Resources, Havelock North.
- Podocarp/hardwood and beech/podocarp forest, Nelson - Clout, M.N., Gaze, P.D., Hay, J.R., and Karl, B.J. 1986. Habitat use and spring movements of New Zealand pigeons at Lake Rotoroa, Nelson Lakes National Park. Notornis 33: 37-44.

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- Tawa/podocarp forest, Marlborough - Clout, M.N., Karl, B.J., and Gaze, P.D. 1991. Seasonal movements of New Zealand pigeons from a lowland forest reserve. *Notornis* 38: 37-47.
- Podocarp/hardwood remnant containing exotics, Canterbury - Ridley, A.R. 1998. The feeding ecology and habitat use of kereru and bellbird in a modified forest remnant, South Canterbury, New Zealand. Unpubl. BSc Hons dissertation, Lincoln University.
- Urban-rural habitats, mixed hardwood forest patches, Banks Peninsula - Schotborgh, H.M. 2005. An analysis of home ranges, movements, foods and breeding of kereru (*Hemiphaga novaeseelandiae*) in a rural-urban landscape on Banks Peninsula, New Zealand. Unpubl. M.Sc. thesis, Lincoln University, Christchurch.
- Beech forest, second-growth hardwood forest and scrub, urban-rural areas, Banks Peninsula - Campbell, K. 2005. A study of home ranges, movements, diet and habitat use of kereru (*Hemiphaga novaeseelandiae*) in Hinewai Reserve, a large regenerating native forest, Banks Peninsula, New Zealand. Unpubl. MSc thesis, Lincoln University, Christchurch.
- Podocarp/hardwood and silver beech forests, South Westland - O'Donnell, C.F.J., Dilks, P.J. 1994. Foods and foraging of forest birds in temperate rainforest, south Westland, New Zealand. *New Zealand Journal of Ecology* 18: 87-107.
- Podocarp/broadleaved forest, exotic plantations, urban habitats, Otago - Dunn, P.L. 1981. The feeding ecology of the New Zealand pigeon (*Hemiphaga novaeseelandiae*). Unpubl. MSc thesis. University of Otago, Dunedin.
- Urban areas, Otago - Baker, A. 1999. Food plants of bellbird (*Anthornis melanura*), tui (*Prothemadera novaeseelandiae*) and New Zealand pigeon (*Hemiphaga novaeseelandiae*) in Dunedin. *Notornis* 46: 270-272.

Foraging - movements on and within shrubs, trees and lianes to access food

- Higgins, P.J. and Davies, S.J.J.F. 1996. New Zealand pigeon. Pp. 1016-1025 in *Handbook of Australian, New Zealand and Antarctic Birds*. Vol. 3, Snipe to Pigeons. Oxford University Press, Melbourne.
- Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- O'Donnell, C.F.J., Dilks, P.J. 1994. Foods and foraging of forest birds in temperate rainforest, south Westland, New Zealand. *New Zealand Journal of Ecology* 18: 87-107.
- Ridley, A.R. 1998. The feeding ecology and habitat use of kereru and bellbird in a modified forest remnant, South Canterbury, New Zealand. Unpubl. BSc Hons dissertation, Lincoln University.

Foods

Gape size

- Gibb, J.A. 1970. A pigeon's choice of plums. *Notornis* 17: 239.
- Dijkgraaf, A.C. 2002. Phenology and frugivory of large-fruited species in northern New Zealand and impacts of introduced mammals. Unpubl. PhD thesis, School of Biological Sciences, University of Auckland.

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Food types and species - buds, foliage, flowers, fruit, invertebrates, water

- Baker, A. 1999. Food plants of bellbird (*Anthornis melanura*), tui (*Prosthemadera novaeseelandiae*) and New Zealand pigeon (*Hemiphaga novaeseelandiae*) in Dunedin. *Notornis* 46: 270-272.
- Bell, R. 1996. Seed dispersal by kereru (*Hemiphaga novaeseelandiae*) at Wenderholm Regional Park. Unpubl. MSc thesis. University of Auckland, Auckland.
- Campbell, K. 2005. A study of home ranges, movements, diet and habitat use of kereru (*Hemiphaga novaeseelandiae*) in Hinewai Reserve, a large regenerating native forest, Banks Peninsula, New Zealand. Unpubl. MSc thesis, Lincoln University, Christchurch.
- Clout, M.N. 1990. The kereru and its forests. *Birds International* 2(4): 10-19.
- Clout, M.N., Gaze, P.D., Hay, J.R., and Karl, B.J. 1986. Habitat use and spring movements of New Zealand pigeons at Lake Rotoroa, Nelson Lakes National Park. *Notornis* 33: 37-44.
- Clout, M.N., Hay, J.R. 1989. The importance of birds as browsers, pollinators and seed dispersers in New Zealand forests. *New Zealand Journal of Ecology* 12 (Supplement): 27-33.
- Clout, M.N., Karl, B.J., and Gaze, P.D. 1991. Seasonal movements of New Zealand pigeons from a lowland forest reserve. *Notornis* 38: 37-47.
- Dijkgraaf, A.C. 2002. Phenology and frugivory of large-fruited species in northern New Zealand and impacts of introduced mammals. Unpubl. PhD thesis, School of Biological Sciences, University of Auckland.
- Dunn, P.L. 1981. The feeding ecology of the New Zealand pigeon (*Hemiphaga novaeseelandiae*). Unpubl. MSc thesis. University of Otago, Dunedin.
- Dunn, P.; Morris, R.B. 1985. New Zealand pigeon. Pp 238-239 *In*: Robertson, C.J.R. (Ed.), *Reader's Digest complete book of New Zealand birds*. Reader's Digest Services Pty Ltd, Sydney.
- Harwood, H. 2002. Seasonal availability and abundance of tree fruit species utilised by urban kukupa. Unpubl. MSc thesis. School of Environmental & Marine Sciences, Auckland University, Auckland.
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- Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- Karan, A. 1999. Diet of kereru in an urban area: implications for weed dispersal. Unpubl. MSc thesis. University of Auckland, Auckland
- Knight, W. 1951. Pigeon eating willow leaves. *Notornis* 4: 84.
- Lee, W.G., Clout, M.N., Robertson, H.A. and Bastow Wilson, J. 1991. Avian dispersers and fleshy fruits in New Zealand. *Proc. Int. Orn. Congr.* XX: 1624-1629.
- Medway, D. 2003. Himalayan dogwoods as a food source for birds. *Miranda Naturalists' Trust News* 50: 18.
- Medway, D. 2004. Holly berries as food for birds. *Miranda Naturalists' Trust News* 54: 17.
- McDonald, N. 1953. Privet berries as bird food. *Notornis* 5: 195.

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- McEwen, W.M. 1978. The food of the New Zealand pigeon (*Hemiphaga novaeseelandiae novaeseelandiae*). New Zealand Journal of Ecology 1:99-108.
- Meadowcroft, J. 1993. Kereru nursery. New Zealand Gardener 49: 36-40.
- Moon, G. 2003. New Zealand pigeon feeding habits. Southern Bird 14: 9.
- O'Donnell, C.F.J., Dilks, P.J. 1994. Foods and foraging of forest birds in temperate rainforest, south Westland, New Zealand. New Zealand Journal of Ecology 18: 87-107.
- Oliver, W.R.B. 1955. New Zealand pigeon (kereru) and Chatham Island pigeon (kuku). Pages 440-444 in New Zealand birds, 2nd edition. A.H. & A.W. Reed, Wellington.
- Pierce, R.J. and Graham, P.J. 1995. Ecology and breeding biology of kukupa (*Hemiphaga novaeseelandiae*) in Northland. Science & Research Series No. 91. Department of Conservation, Wellington.
- Ridley, A.R. 1998. The feeding ecology and habitat use of kereru and bellbird in a modified forest remnant, South Canterbury, New Zealand. Unpubl. BSc Hons dissertation, Lincoln University.
- Schotborgh, H.M. 2005. An analysis of home ranges, movements, foods and breeding of kereru (*Hemiphaga novaeseelandiae*) in a rural-urban landscape on Banks Peninsula, New Zealand. Unpubl. M.Sc. thesis, Lincoln University, Christchurch
- Simons, G. 2006. Pet appraisal: native wood pigeon – kereru. New Zealand Lifestyle Farmer November 2006: 46-47.
- Taylor, M.M. 1950. Wood pigeons eating shoots and leaves. Notornis 4: 33.

Feeding rate – items per minute, minutes feeding per day

- Clout, M.N., Hay, J.R. 1989. The importance of birds as browsers, pollinators and seed dispersers in New Zealand forests. New Zealand Journal of Ecology 12 (Supplement): 27-33.
- Dunn, P.L. 1981. The feeding ecology of the New Zealand pigeon (*Hemiphaga novaeseelandiae*). Unpubl. MSc thesis. University of Otago, Dunedin.
- Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- Sadlier, N. 2004. Winter feeding activity and behavioural observation of kereru in urban Southland. Unpubl. study, Southern Institute of Technology, Invercargill.

Seed passage times

- Bell, R. 1996. Seed dispersal by kereru (*Hemiphaga novaeseelandiae*) at Wenderholm Regional Park. Unpubl. MSc thesis. University of Auckland, Auckland.
- Clout, M.N. and Tilley, J.A.V. 1992. Germination of miro *Prumnopitys ferruginea* seeds after consumption by New Zealand pigeons *Hemiphaga novaeseelandiae*. NZ J. Bot. 30: 25-28.

Food regurgitation

- Simpson, M.J.A. 1971. Travelling seeds. Wellington Botanical Society bulletin 37: 63-64.
- Kereru News No. 58 – regurgitation by captive kereru

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Seed dispersal - kereru movements and their consequences for seed dispersal and forest regeneration

- Bell, R. 1996. Seed dispersal by kereru (*Hemiphaga novaeseelandiae*) at Wenderholm Regional Park. Unpubl. MSc thesis. University of Auckland, Auckland.
- Clout, M.N., Hay, J.R. 1989. The importance of birds as browsers, pollinators and seed dispersers in New Zealand forests. *New Zealand Journal of Ecology* 12 (Supplement): 27-33.
- Hill, M. T. 2003. Diet, dispersal and distribution of kereru (*Hemiphaga novaeseelandiae novaeseelandiae*) in a lowland podocarp-hardwood forest. Unpubl. MSc thesis, Massey University, Palmerston North.
- Johnston, S. 2001. *Prumnopitys ferruginea* (miro) seedling recruitment patterns in the Catlins, New Zealand and dispersal by *Hemiphaga novaeseelandiae* (New Zealand pigeon). Unpubl. MSc thesis, Department of Botany, University of Otago, Dunedin.
- Karan, A. 1999. Diet of kereru in an urban area: implications for weed dispersal. Unpubl. MSc thesis. University of Auckland, Auckland
- Kelly, D.; Robertson, A.; Ladley, J.; Anderson, S.; McKenzie, R. 2003. Is interdependence of native fauna and flora an issue for future survival of native plants? *Canterbury Botanical Society* 37: 88-98.
- Kelly, D.; Robertson, A.W.; Ladley, J.J.; Anderson, S.H.; McKenzie, R.J. 2006. Relative (Un)Importance of introduced animals as pollinators and dispersers of native plants. Pp 227-245 in *Biological Invasions in New Zealand*. Allen, R.B.; Lee, W.G. (Eds). Ecological Studies vol 186. Springer-Verlag Berlin Heidelberg.
- Lee, W.G., Clout, M.N., Robertson, H.A. and Bastow Wilson, J. 1991. Avian dispersers and fleshy fruits in New Zealand. *Proc. Int. Orn. Congr.* XX: 1624-1629.
- Schotborgh, H.M. 2005. An analysis of home ranges, movements, foods and breeding of kereru (*Hemiphaga novaeseelandiae*) in a rural-urban landscape on Banks Peninsula, New Zealand. Unpubl. M.Sc. thesis, Lincoln University, Christchurch.
- Simpson, M.J.A. 1971. Travelling seeds. *Wellington Botanical Society bulletin* 37: 63-64.
- See also the section on Movements above