Report of a field trip to the Parikino Swamp Forest, April 2011

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Introduction

On 30th April 2011, members of the Whanganui Museum Botanical Group and Birding Wanganui together visited a patch of *kahikatea* swamp forest on the farm of Richard Shaw at Parikino. The field trip was led by Clare Ridler (Horizons Regional Council), along with Richard Shaw. A total of 11 people took part, all but two of whom are members of the Museum Botanical Group (seven are members of Birding Wanganui, with another two receiving newsletters and notices).

This isolated forest patch is situated on unconsolidated alluvium, part of a floodplain of the Whanganui R. With the assistance of Horizons Regional Council, the forest has been protected from grazing by livestock since 2007 (a smaller adjacent section was fenced off later). This is allowing understorey and groundcover plants to recover, along with seedlings and saplings of canopy trees. The site was listed in the Protected Natural Areas survey report for the Matemateaonga Ecological District as a priority representative natural area for protection. Interestingly, this forest patch is classed as "Pine forest - Closed canopy" in Landcare's New Zealand Land Cover Database Version 2, where its area is given as 12.4 ha (not 8 ha as reported by in Wanganui Plant List 217, Department of Conservation, Wanganui).

The Museum Botanical Group have produced a list of over 150 vascular plant species found to date in and immediately adjacent to the forest patch (Wanganui Plant List 217). *Dacrycarpus dacrydioides* (kahikatea) is the dominant tree species, with *Beilschmiedia tawa* (tawa), *Coprosma rigida* (stiff karamu), *Laurelia novae-zelandiae* (pukatea), *Melicytus micranthus* (small-leaved mahoe), *Streblus heterophyllus* (small-leaved milktree or turepo) the other common tree and tall shrub species. These and other species present are typical of fertile floodplain soils. At the time of the visit, the forest floor was quite dry, but the presence of many swamp forest species suggests that the area is periodically much wetter. Continued incision of the floodplain by the Whariki Stream, which lies close to the forest, may well affect future drainage and soil moisture dynamics.

Which bird species occur there is not well known, being limited to a list drawn up by Horizons Regional Council staff of species seen and heard during a short visit in 2003: paradise shelduck, *Tadorna variegata*; mallard, *Anas platyrhynchos*; kereru, *Hemiphaga novaeseelandiae*; kingfisher, *Halcyon sancta*; blackbird, *Turdus merula*; fantail, *Rhipidura fuliginosa*; and Australian magpie, *Gymnorhina tibicen*.

Methods

The visit to the forest lasted almost 4½ hours, centred on midday. During that time, bird species seen and heard in and around the forest were listed, and notes made on their relative abundance, along with any other relevant observations. In addition, five 5-minute bird counts were done at arbitrarily chosen locations within the forest itself. All birds seen or heard in a 5-minute period within an estimated 25 m of the point were recorded, with efforts made to avoid double-counting. The distance between successive points averaged 50 m (38 m – 85 m). With the height and density of the forest canopy, in which the majority of the birds were located, most records were obtained aurally rather than visually, which counts against any birds that were present but silent.

Along a small drainage ditch lined with *Typha orientalis* (raupo), outside the forest, sound recordings of spotless crake, *Porzana tabuensis*, were played in an attempt to stimulate a response from this species, if present. The method works well elsewhere, including at this time of year, but no responses were noted on this occasion, suggesting that the species is absent. (A larger protected area of wetland occurs 350 m north-east of the main forest block, but not visited on this occasion; it will be worth visiting on another occasion.)

Results

Species seen and heard in and around the forest are listed in Table 1. The occurrence of New Zealand falcon is notable but it is unclear if this bird is resident as opposed to being a transient, possibly a young bird dispersing from its natal territory. Although seen only in flight through the canopy, where the light was quite dull, the bird seemed to have dark under underparts,

characteristic of juvenile plumage. The other noteworthy observation was the abundance of tui and kereru, with both species feeding on the abundant kahikatea fruit. The list contains a number of species not recorded in 2003. Whether these species were present then but overlooked, or have recolonized the site is not known. As the 'new' species are all common in the area, it is more likely that the species were overlooked.

Table 1. Bird species seen and heard in and around Parikino Swamp Forest, 10h00-14h30, 30th April 2011. Birds are listed as abundant, A (>20 individuals recorded per hour); common, C (10-20 individuals hr^{-1}); occasional, O (2-9 individuals hr^{-1}); and uncommon, U (<1 individual hr^{-1}).

Species	Notes
New Zealand Falcon *Falco novaeseelandiae*	U. One bird present inside kahikatea swamp forest. Flew through the forest, below the canopy, landing near the forest edge, disturbing tui and kereru on the way.
Australasian Harrier *Circus approximans*	U. One seen quartering a nearby hillside.
Masked Lapwing *Vanellus miles*	O. Two flocks of 5 and 3 below farmhouse complex; others seen and heard in other pastures but numbers not recorded.
Kereru *Hemiphaga novaeseelandiae*	C. 10-20 birds in kahikatea swamp forest, presumable attracted by and feeding on kahikatea fruit (and possibly those of other tree species).
Kingfisher *Halcyon sancta*	U. One heard along the drainage ditch that separates the main forest patch from a smaller more bushy section.
Welcome Swallow *Hirundo tahitica*	O. Individual birds and pairs hawking insects over grassland along the forest edge.
Silvereye *Zosterops lateralis*	O. Individuals and a couple of small flocks heard inside the forest.
Grey Warbler *Gerygone albofrontata*	O. Pairs of birds noted inside the main forest block.
Blackbird	O. Individual birds seen in the main forest block and adjacent bush block. A couple of birds seen feeding on kahikatea fruit.
Song Thrush	O. Individual birds noted throughout the forest, most often heard singing loudly rather than being seen.
Fantail	O. Individuals and pairs noted throughout the forest, although this species' habit of being attracted to people (or animals) moving through the forest makes it difficult to assess its abundance.
Tui	A. Many birds present in the forest, feeding on kahikatea fruits (and possibly those of other tree species). Very vocal.
Bellbird	U. Surprisingly uncommon, with only a few birds heard.
House Sparrow	O. Individuals and small groups seen along the forest edge, the birds perhaps using the trees as periodic refuges while feeding in adjacent grassland.
Chaffinch	O. Small numbers of individuals noted in the forest, more so towards the edges.
Starling	A. Small flocks and individuals feeding on kahikatea fruit. A larger pre-roost gathering heard at the northeast end of the later-fenced forest patch.
Australian Magpie	C. Small groups in surrounding pastures, occasionally using trees along the forest edge as refuges.

Table 2. Bird species seen and heard during five 5-minute bird counts inside the Parikino Swamp Forest, 11h41-12h35, 30th April 2011. See text for more details.

Site	1	2	3	4	5	Totals
Easting	1784902	1784898	1784868	1784830	1784830	
Northing	5593233	5593271	5593296	5593292	5593207	
Start time	11h41	11h57	12h11	12h18	12h30	
Wind	nil	nil	nil	nil	nil	
Cloud	nil	nil	nil	nil	nil	
Tui	5	5	6	5	6	27
Kereru	2	0	3	4	4	13
Song Thrush	2	1	2	1	1	7
Grey Warbler	0	2	2	2	1	7
Fantail	1	1	0	2	2	6
Blackbird	1	2	1	1	0	5
Silvereye	0	0	0	0	4	4
Chaffinch	1	0	1	0	0	2
Bellbird	0	0	0	1	1	2
NZ Falcon	0	1	0	0	0	1
Starling	0	0	1	0	0	1

Discussion

The visit coincided with a period of heavy fruiting of kahikatea (Fig. 1) and various other species (e.g. matai, *Prumnopitys taxifolia*; mahoe, *Melicytus ramiflorus*; karamu, *Coprosma robusta*; small-leaved milktree, *Streblus heterophyllus*; and NZ passionflower, *Passiflora tetrandra*). This may well account for the large numbers of tui and kereru present in the forest. It is unlikely that the forest by itself could support this number of birds all year round. The nearest other patches of forest are a small patch 600-800 m due north, and larger and more contiguous patches 1.4 km west, along and beyond the Whanganui R. Both these distances are within the unbroken flight range of tui and kereru, but may be beyond the distance that other fruit-eating native species, such as bellbird, are willing to cross in one flight. Repeating and doing more 5-minute bird counts on other occasions will give a better idea of the composition of the bird community and the abundance of different species.

Figure 1. Fruits of *Dacrycarpus dacrydioides* (kahikatea, left) and *Melicytus ramiflorus* (mahoe, right), illustrating the abundance of fruits present in the Parikino Swamp Forest, April 2011.

At present, there is relatively little vertical stratification within the forest, due largely to decades of grazing and browsing by livestock preventing the regeneration of many species (but perhaps not kahikatea, given the abundance and the apparently relatively young age of many individuals of this species in the stand). Following protection of the forest in 2007, however, understorey shrubs and seedlings and saplings of canopy trees are beginning to emerge (Fig. 2). This is likely to benefit bird species that usually inhabit the understorey, such as fantail and tomtit, *Petroica macrocephala*. Fantails are already present in the forest, but tomtit may not be (it was not recorded during this survey or in 2008). Whether tomtit and any other currently absent understorey species can reach the forest from wherever the nearest sizeable population is, will depend on the presence of suitable intervening patches of habitat acting either as a corridor or as stepping stones. The surrounding vegetation is mostly high-production grassland and pasture but there are small patches and ribbons of indigenous forest and other native vegetation nearby (Fig. 3).

Figure 2. Changes in understorey cover between early May 2008 (left) and late April 2011 (right). Photo credit: May 2008 (Colin Ogle).

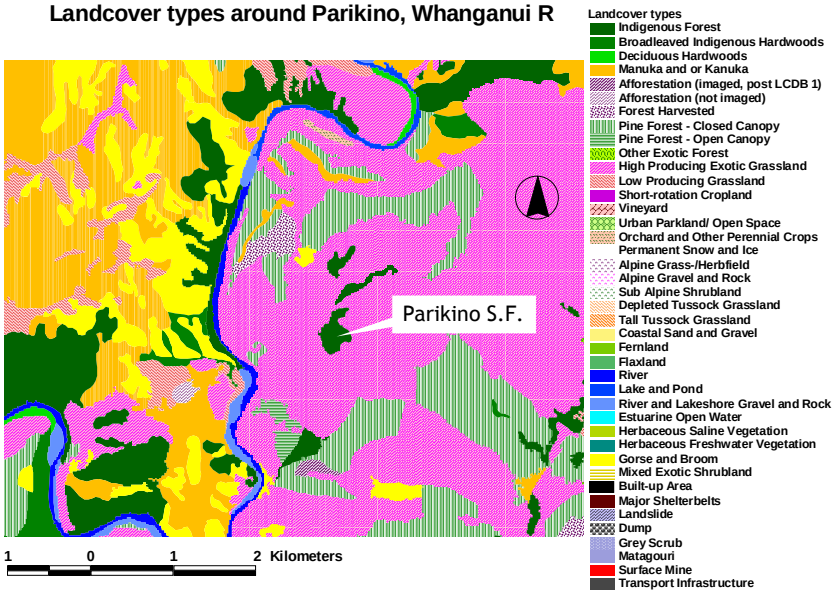

Figure 3. Landcover types around the Parakino Swamp Forest, based on the New Zealand Land Cover Database Version 2. The classification of the swamp forest and the immediately adjacent forest patch has been corrected from its classification as closed pine forest in the database.

These remaining patches of native vegetation need to be managed in an integrated manner to ensure the ongoing functioning and long-term viability of these forest fragments. If this is not done, species will continue to be lost until new equilibria are reached appropriate to size of each patch.