

Habitat use and seasonality of native forest birds in southwestern Christchurch

Jon Sullivan

Department of Ecology, PO Box 84, Lincoln University, Lincoln 7647, New Zealand

Jon.Sullivan@lincoln.ac.nz

Prepared: 1 July 2010

Last modified: 4 July 2010

Summary

This is a brief report prepared for the Spreydon-Heathcote Community Board as background for decisions on the management of Ernle Clark reserve and adjacent land. It describes the importance of Ernle Clark and similar small forested reserves for native bird populations in southwestern Christchurch.

Every week since July 2008, shortly after our son Max was born, I have been taking Max for a run around southwestern Christchurch. (Well, I run, Max often sleeps.) I have two standard loops (see Figure 1, Table 1) that purposefully take us through the few areas of native forest within running distance of our Hoon Hay home on Gainsborough Street. One of these areas is Ernle Clark Reserve. The others are Ashgrove Reserve, Purau Reserve, the native plantings along the walkway through Centennial Park, and the native plantings along the Heathcote River between Curletts Road and Templetons Road. The walkway between Valley Road and Macmillan Ave is also functionally a small strip of forest habitat.

Since my first run with Max, I have counted all pre-human native forest birds¹ (among other birds and insects) that we have seen or heard along the run. I jot them down on a piece of paper while I run and when I get home I enter them into a database for inclusion in the New Zealand Biodiversity Recording Network (NZBRN). NZBRN is a free national website (<http://www.nzbrn.org.nz>) for storing natural history observations that I helped to set up, funded by the NZ Government.

The patterns of pre-human forest birds that have emerged from my counts have been astonishingly clear. Native forest birds need forest, pure and simple. If you want to see fantails or grey warblers, go to one of the above listed forested areas (Figures 2,3). There are next to none of these birds in suburbia. Those few that are occasionally seen in suburban gardens appear to be just passing through between forest patches. Bellbirds show the same pattern, although not as starkly (Figure 4). At the right times of the year, they venture out into suburbia to find flowering eucalypts and *Banksia* and wattle trees. I doubt that it is coincidence that almost all of my bellbirds observations outside of forested reserves are in the Cashmere hills where most of the big old trees of these species are found.

Similar patterns to these were recently described in Dunedin by University of Otago researchers². New Zealand's native forest birds are where the forest is.

These patterns are particularly important for Christchurch, since our city largely lacks the naturally forested gullies and banks that characterise New Zealand's other major cities. It means that if we want more native birds inside our city, our small areas of native plantings are vitally important. We

¹ Note that I say pre-human forest birds. Silvereyes are native and widespread but naturally established in New Zealand from Australia only after people had arrived and cleared most of the forest.

² van Heezik, Y., Smyth, A., and Mathieu, R. 2008. Diversity of native and exotic birds across an urban gradient in a New Zealand city. *Landscape and Urban Planning*, **87**:223–232.

need to look after them and grow them where we can. This is one reason why the Ernle Clark care group I contribute to is keen to see the native plant component of the reserve mature and diversify.

In my run counts, recreational parkland areas that lack native forest patches are not detectably better for native birds than regular suburbia. These are places like Hoon Hay Park, Gainsborough Park, and the oak and daffodil lined stretch of the Heathcote River across from Princess Margaret Hospital. This is no great surprise since the deciduous European trees in these areas lack bird-edible flowers and fruit and provide no shelter in winter.

The Heathcote River between Ashgrove Reserve and Ernle Clark Reserve provides a useful example of these patterns. All three areas have tall trees and are equally close to the river. Only Ashgrove Reserve and Ernle Clark have a thick evergreen understorey of native plants and only Ashgrove Reserve has a closed canopy of evergreen native trees. I have made 57 observations of fantails in the two reserves and just 6 along the intervening walkway, even though the reserves are much less than half of the total distance. There are almost always fantails in one or both reserves. There is almost never a fantail in-between.

On the following pages are some graphs which display these patterns in more detail. It is clear to me that if we want more fantails and grey warblers in our gardens, as many of my neighbours do, then we need more places like Ernle Clark and Ashgrove Reserve dotted across the city. It is great to see this already happening to some extent. My counts show that the native plantings in Centennial Park and along the rim of the Wigram retention basin are already being well used by native forest birds and clearly separate these areas from the likes of Hoon Hay Park and Gainsborough Park which still have nothing to offer native birds.



Figure 1. My two run routes, each ran once a fortnight since July 2008. Also shown here are the sites where I have observed fantails over this period. The vast majority are in the native forested areas along the SE edge of the Wigram retention basin, in Centennial Park, Ashgrove Reserve, Ernle Clark Reserve, Purau Reserve, and the walkway between Macmillan Ave and Valley Road/ upper Valley Road.

Table 1. My run sections. The rows in green are sections with substantial forest-like habitat, including areas of native trees.

Run section
1. Gainsborough St to Curletts Rd via Wyn-Downing-Kevin-Hoon Hay Park-Tankerville-Lincoln Rd
2. western end of Rose St to 3 Gainsborough St via Leistrella to Rydal to Sparks to Maryhill
3. Rose St
4. Ernlea Tce to the western end of Somerfield via Colombo to Aylmer to Selwyn to Somerfield
5. Ernle Clark reserve
6. Heathcote River walkway between Valley Rd and Barrington St
7. Valley Rd
8. Macmillan Ave walkway down to Valley Rd
9. Dyers Pass Rd from the top of the Purau St woodland walkway to the top of the Macmillan Ave walkway down to Valley Rd
10. Purau St to Dyers Pass Rd via Purau Reserve
11. Ashgrove Terrace, Ashgrove Reserve to start of Ernle Clark reserve just past Barrington St
12. Ashgrove Reserve, Ashgrove Terrace
13. Palmside St to Ashgrove Terrace via Ferniehurst
14. Centennial park walkway along the Heathcote River, from Sparks Rd to Rose St
15. Gainsborough to Centennial park via Wyn-Hoon Hay-Sparks, crossing Sparks opposite Waimokihi
16. Templetons Rd to Gainsborough St via Halswell-Hendersons-Barrowclough-Northcroft-Rowley-McCarthy-Mathers-Hoon Hay Park-Victors-Newland-Samuel-Gainsborough Park
17. Heathcote river margin & native restoration plantings between Curletts Rd and Templetons Rd

Table 2. The number of native forest birds observed to date (1 July 2010) by habitat type. There is a strong preference for the few forest-like habitats. All habitat differences are (highly) statistically significant except for kereru ($P = 0.053$).

Bird species	Number of bird observations		
	Forest-like habitats	Cashmere hills suburbia	Plains suburbia
Fantail	141 (82%)	15 (9%)	15 (9%)
Grey warbler	57 (85%)	5 (7.5%)	5 (7.5%)
Bellbird	61 (42%)	67 (46%)	18 (12%)
Kereru	4* (23.5%)	9 (53%)	4* (23.5%)
Distance (km)	4.34 (21%)	1.34 (7%)	14.54 (71%)

* All 4 plains kereru were along Ashgrove Terrace, two flying about Ashgrove Reserve. All kereru in forest-like habitat were along the Valley Road-Macmillan Ave walkway.

Figure 2. Habitat use and seasonality of fantails in southwestern Christchurch. The green bars are the areas with patches of native forest vegetation and forest habitat. Note that my bird counts are standardised by distance (per km). See Table 1 for descriptions of each numbered run section. Ernle Clark reserve is number 5. The sites are ordered so that the Cashmere hill sites are in the center.

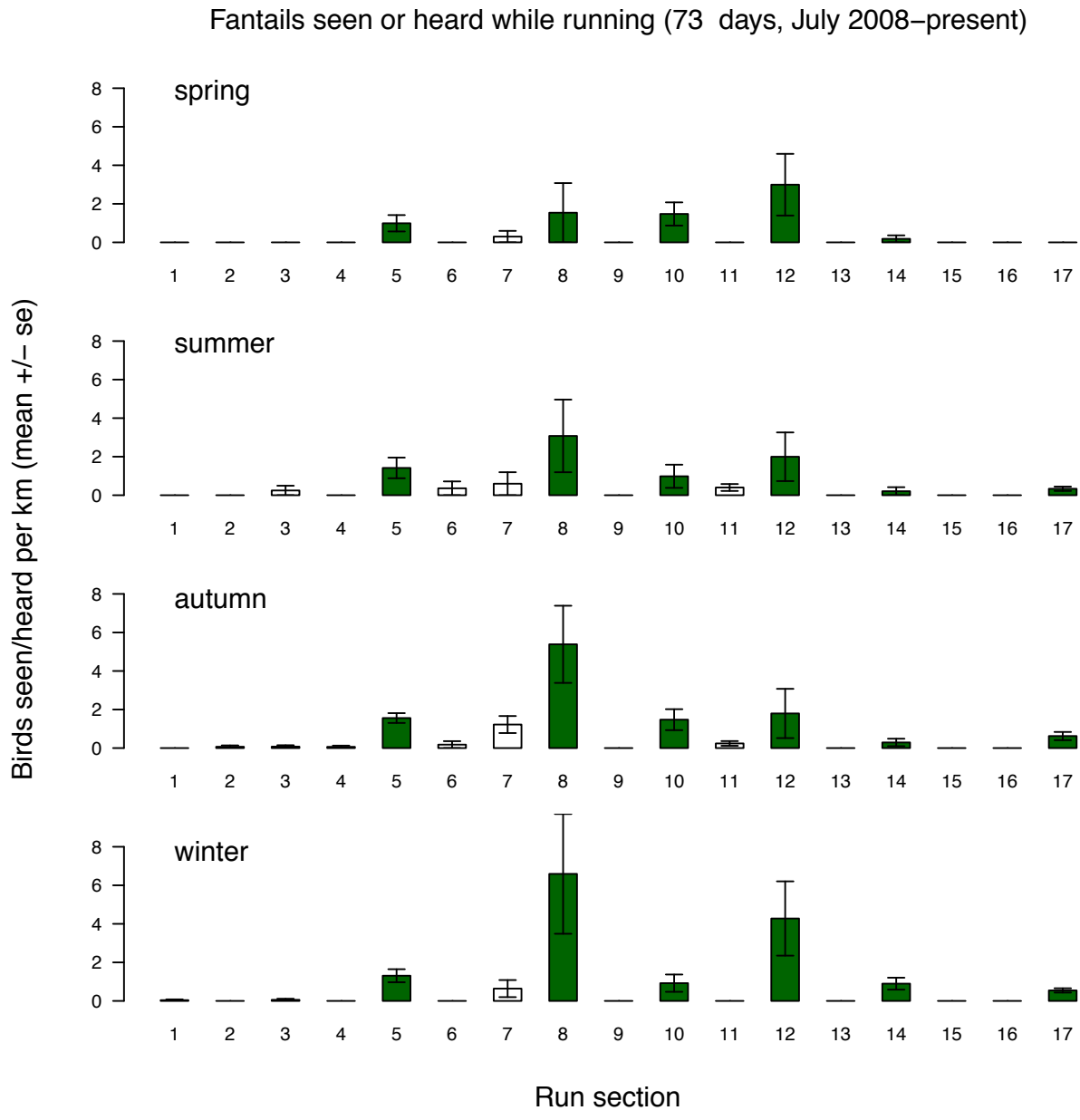


Figure 3. Habitat use and seasonality of grey warblers in southwestern Christchurch. The green bars are the areas with patches of native forest vegetation and forest habitat. See Table 1 for run section descriptions.

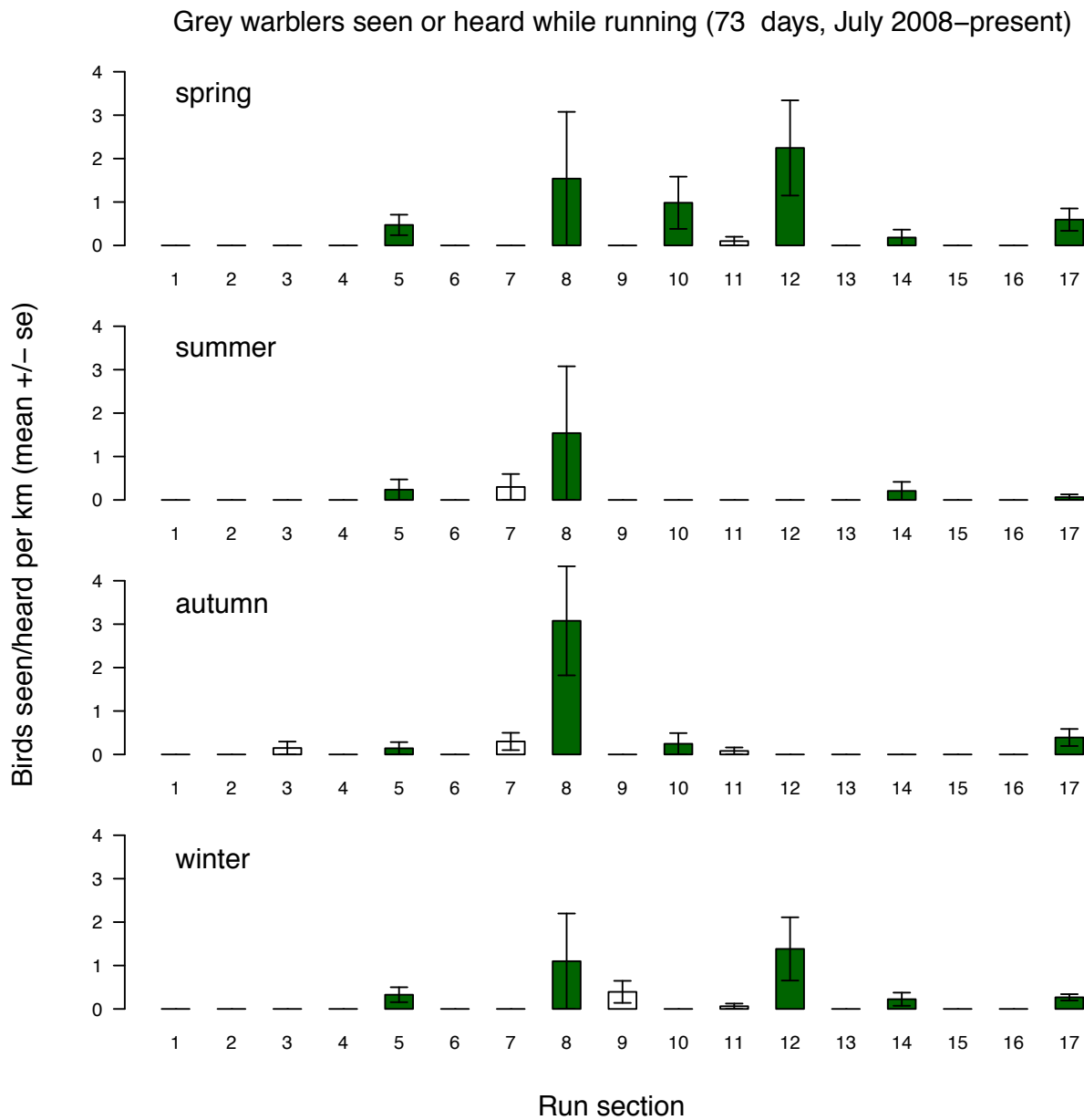


Figure 4. Habitat use and seasonality of bellbirds in southwestern Christchurch. The green bars are the areas with patches of native forest vegetation and forest habitat. See Table 1 for run section descriptions.

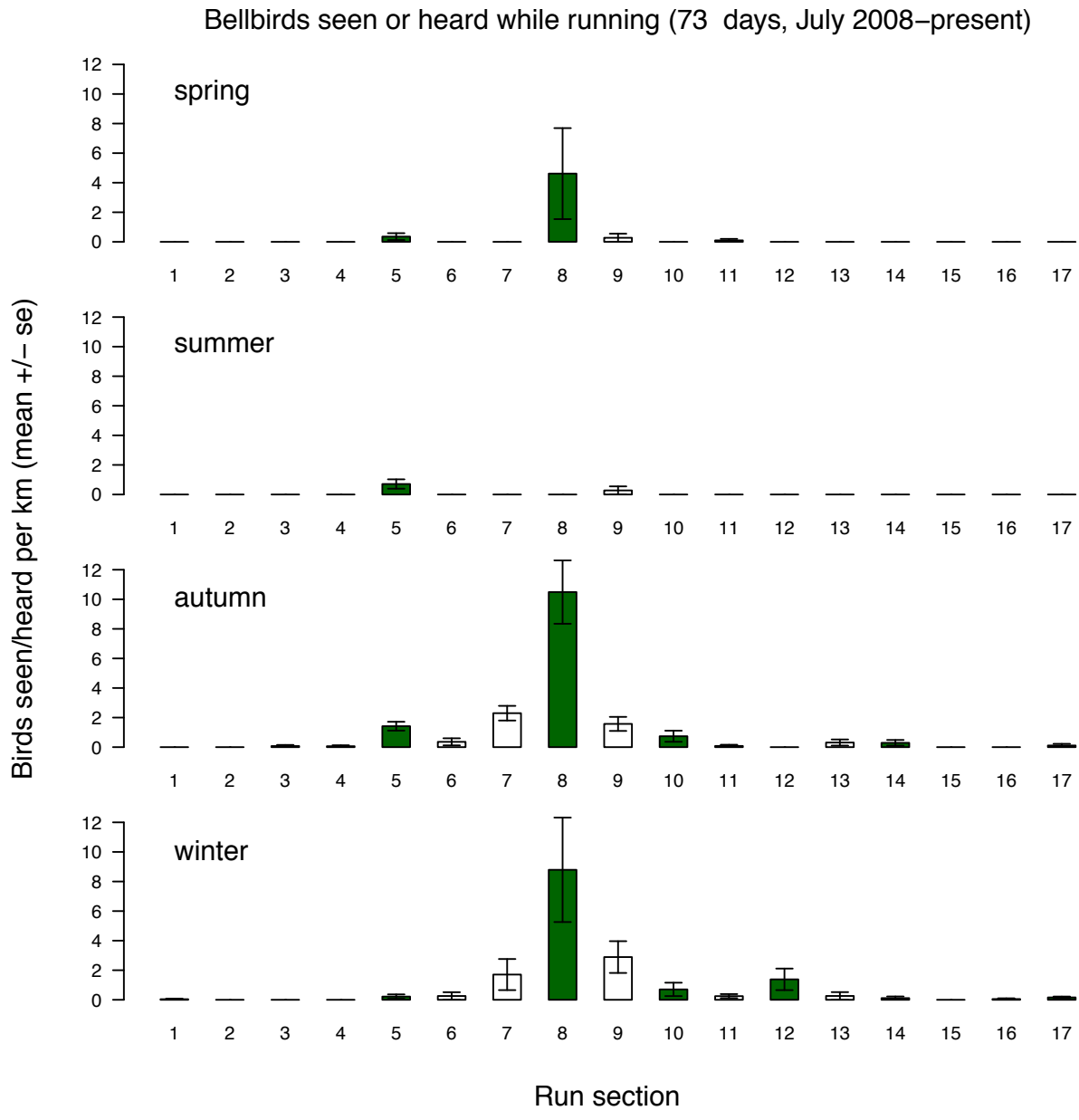


Figure 5. Habitat use and seasonality of kereru in southwestern Christchurch. The green bars are the areas with patches of native forest vegetation and forest habitat. See Table 1 for run section descriptions. All the kereru I have seen along my runs have been in or adjacent to the Cashmere hills.

