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STUDY OF BIRDS IN TREE BELTS THROUGH FARMLAND AT FRANKLAND, WESTERN AUSTRALIA

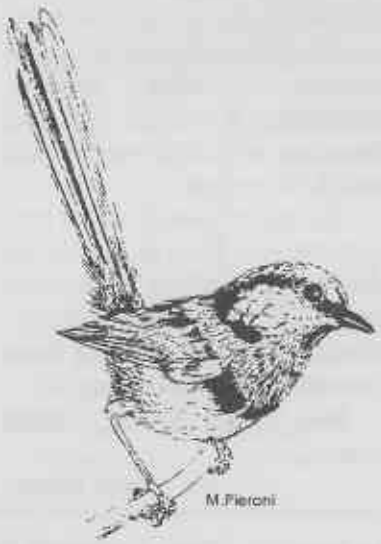
by Rita Watkins

Since July 1989, Rita has been recording birds using tree belts on her nephew, Ron Watkins' farm, "Payneham" at Frankland. Her full results are of great interest, and will be published in a scientific journal. However, they are summarised here to show just how valuable such tree belts are to birdlife.

THE aim of my study was to document the numbers and diversity of birds using tree belts through farmland.

I worked on "Payneham", at Frankland in Cranbrook Shire. It is owned by Ron and Sue Watkins who took over the management in 1973. As some salt became evident, they looked at methods to ameliorate the problem and developed an Integrated Whole Farm Plan, whose main elements are:

- ▷ survey the property to ascertain significant landscape features
- ▷ drains put in to clay on gradient, to move water into a catchment eg dam or creek
- ▷ water stored in dams for irrigation or aquaculture, surplus into waterways
- ▷ tree belts planted below drains for shelter, windbreak, fauna habitat, as groundwater pumps and eventually, timber crop.



Ron has gained many awards for the work he has done on "Payneham", the most prestigious being the United Nations Global 500 Award.

Systematic surveys of birds using the tree belts would give an indication of the 'health' of the farm as the system developed. At the time, my husband and I were living on the property that adjoined the tree belts, and Ron enthusiastically supported my idea of a bird survey. I started in July 1989 and have continued, with some interuptions, until autumn 1997.

The survey was done four times a year, once in each season. The study area consisted of four tree belts, each approx 1.6 km long, three small remnant vegetation areas which are connected to the tree belts, and several dams and other water features. I walked each tree belt counting all birds, seen or heard, taking about 60-75 mins for each belt. The birds were recorded as being either in the tree belt, in the paddock adjacent to the drain, or in remnant bush through which the drain passed, taking in about 100 m on either side of the drain. Separate tallies were made for each tree belt, so that a comparison could be made between them. Water birds on dams were also recorded.

Have you thought of doing bird recording in your own reveg areas? It's pretty simple, you just walk a set course, at a set time, four times a year. And record all you see. To understand whether reveg is helping maintain biodiversity, we need this sort of data!

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Species used and year of planting

Species	tree belt			
	1	2	3	4
Acacia baileyana		1986		
A. microbotrya		1986	1987	
Chamaecytisus palmensis	1985	1986	1987	1985
Eucalyptus camaldulensis	1985			
E. globulus	1985		1984	1985
E. maculata	1985		1987	1985
E. melliodora		1986		
E. muellerana	1985			
E. resinifera	1985			
E. saligna				1985
E. wandoo	1985	1986	1987	

The trees used were chosen for their timber and windbreak potential; each belt is four rows wide and fenced to prevent stock access. Most of the plants used are not native to WA.

In the time of my study, a total of 8510 birds have been recorded, from 79 different species. This is a high diversity. The fact that patches of native bush remain in the area would contribute to this diversity. There is 25% of remveg left on "Payneham" and also 25% on the property to the north, including an area of 37 ha. An estimated 15% of bush remains in a 5 km radius of the study site. Most of this bush has been denuded of understorey to a large extent by grazing sheep, making it less suitable for birds requiring a thick understorey. In the tree belts, this habitat was provided to some extent by dense growth of tagasaste seedlings.

Birds use the tree belts in the following ways:

▷ Food source

Nectar provided by flowering eucalypts and tagasaste is used by 8 species of honeyeater, plus silvereye and probably parrots, thornbill, gerygone and pardalote. Eucalypt, acacia and tagasaste fruit is available for parrots, pigeon and quail. Insects are eaten by most birds, but especially thornbills, robins and flycatchers.

▷ Home territory

Some species have established territories, such as Splendid Wren, Grey Fantail, Willie Wagtail and Thornbills.

▷ Nesting

The small birds with home territories nest in the tree belts. A Shining Bronze-cuckoo fledgeling has been seen being fed by Inland Thornbill. Probably some of the honeyeaters nest in the belts, but nests haven't been observed. Juvenile birds of sedentary species have been seen, eg Scarlet Robin, Grey Fantail, Splendid Wren.

▷ Rest and shelter

▷ Corridors

The tree belts provide corridors between areas of bush and between revegetated areas. Parrots, honeyeaters and Yellow-rumped Thornbill move up and down the belts.

Many birds using the tree belts for shelter and foraging would not find them suitable for nesting, eg. parrots, which require nest holes in older, larger trees remaining in the native bush. Being able to move between the native bush and tree belt is an enormous advantage for most birds and at the junction of the two habitats was often where many birds were recorded.

All birds recorded in remnant bush have been seen in tree belts, even, very occasionally, the Rufous Treecreeper and the Western Yellow Robin, which are normally only seen in bushland.

Seasonal variations are interesting. Figure 1 shows the variation in numbers of birds between the seasons and the tree belts. Winter counts are substantially higher in all belts except 4, due to the flowering of Tagasaste, which brings in large numbers of Brown Honeyeaters and Silvereye, with smaller numbers of Red Wattlebird, Singing, Brown-headed, White-naped and Yellow-plumed Honeyeaters. Parrots are more abundant in winter.

This study shows that the tree belts have provided valuable habitat which supports a high number and diversity of birds.

Rita Watkins is a member of Birds Australia and the Western Banders Assn. She has now retired to Leschenault, and can be contacted on 08 9725 8405.

Figure 1