

Bird populations in a rural native garden in New South Wales

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Birds were recorded weekly between 2001 and 2008 in a rural garden at East Seaham in the Lower Hunter Region. The 119 species, including 17 which are nominally resident, recorded during the eight years of this study demonstrate that a large but relatively isolated rural garden provides important bird habitat. Planting native shrubs attracted a number of smaller species by providing both food and shelter from predators. Grey Butcherbirds when resident have a profound adverse impact on the smaller species of birds, an effect which is probably exacerbated by the isolation of the site from surrounding bushland.

INTRODUCTION

This is a report of bird observations made over the last eight years at a site in the Lower Hunter Region. In some cases the changes noted can be readily explained, while in others a cause can be surmised. However, the number of interacting variables means that some of the changes remain a mystery.

The Site

The site is a two hectare property at 29 Wallaroo Road, East Seaham (32° 40' 09" S, 151° 45' 56" E). The property is registered as site no. 999 in the Birds Australia Atlas Survey. It includes areas of grass, both long and mowed, scattered trees, native shrubs and a small dam. The trees over 3m tall number about 250 and consist mainly of ironbark, forest red gum *Eucalyptus tereticornis* and spotted gum *Corymbia maculata*, with a few melaleucas, casuarinas and other unidentified species. In three areas the trees form copses which provide a canopy but there is little understorey. There are seven flowering palms beside the house. The native shrubs are grouped in clumps separated by areas of grass and include over 80 grevilleas. Across the road there are a number of farm dams and large open areas for the grazing of horses, cattle and sheep. Within a kilometre there are significant areas of forest leading to the Wallaroo Nature Reserve and Wallaroo State Forest.

METHODOLOGY

Each month has been divided into four weeks: week one being the 1st to the 7th, week two the 8th to the 14th, week three the 15th to the 21st and week four the 22nd to the

end of the month. There are thus 48 weeks in the year. A record is kept of species seen or heard from the property each week. No attempt is made to identify the abundance of each species. This method leads to certain anomalies. Flyovers such as eagles and pelicans are included, although they never actually visit the property. Other birds which rarely or never visit the property are recorded because their calls carry a long distance. Examples are the Eastern Whipbird *Psophodes olivaceus*, Pheasant Coucal *Centropus phasianinus*, Wonga Pigeon *Leucosarcia picata* and White-winged Chough *Corcorax melanorhamphos*. Other smaller species such as wrens, finches and thornbills may be missed because their calls do not carry and they are only recorded when they actually visit the property. The records must be presumed to understate the actual situation, as observation is on a casual basis ancillary to the routine daily activities of the two observers. There is also the question of the diligence of the recorders, which may vary from week to week. Doubtless some avian visitors go un-noticed. There are some gaps in the records corresponding to periods when no-one was available to do the recording. The number of record weeks therefore varies from year to year. For this reason the data is presented, not as the number of weeks in a year in which a species was present but as the Reporting Rate. For example, if in a particular year, records were kept for 44 weeks and a certain species was recorded in 22 weeks, it would be shown as having a reporting rate of 50 percent.

RESULTS

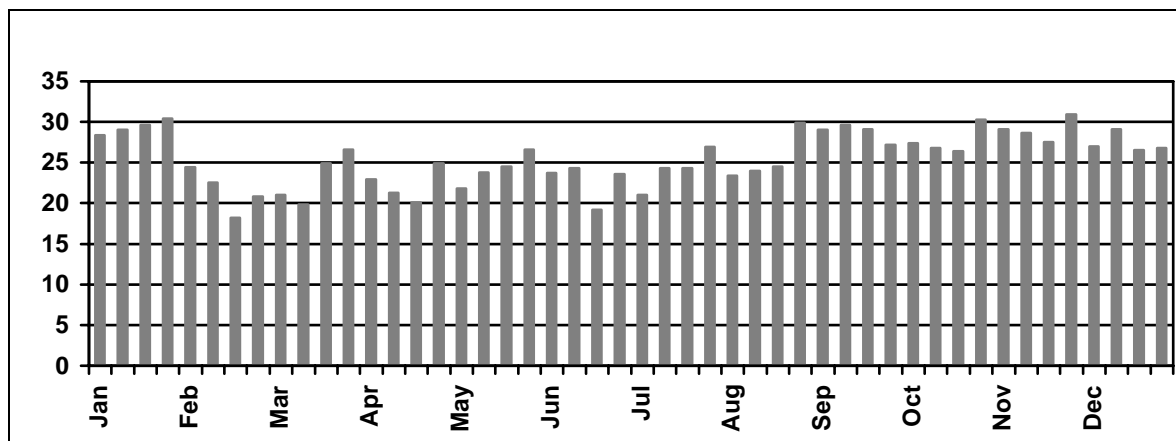
A total of 119 species has been recorded. Of these, 17 have been recorded in more than 80 percent of weeks and are considered resident. A further 26 have been characterised as frequent visitors, being recorded in more than 20 percent of weeks. Another 7 are seasonal, summer visitors. The remainder are occasional visitors, some having been recorded only once in the eight years.

Resident Species
Australian Wood Duck <i>Chenonetta juba</i>
Pacific Black Duck <i>Anas superciliosa</i>
Crested Pigeon <i>Ocyphaps lophotes</i>
Masked Lapwing <i>Vanellus miles</i>
Galah <i>Eolophus roseicapillus</i>
Sulphur-crested Cockatoo <i>Cacatua galerita</i>
Eastern Rosella <i>Platycercus eximius</i>
Laughing Kookaburra <i>Dacelo novaeguineae</i>
Noisy Miner <i>Manorina melanocephala</i>
Grey-crowned Babbler <i>Pomatostomus temporalis</i>
Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>
Grey Butcherbird <i>Cracticus torquatus</i>
Australian Magpie <i>Cracticus tibicen</i>
Willie Wagtail <i>Rhipidura leucophrys</i>
Australian Raven <i>Corvus coronoides</i>
Magpie-lark <i>Grallina cyanoleuca</i>
Welcome Swallow <i>Hirundo neoxena</i>
Frequent Visitors
Chestnut Teal <i>Anas castanea</i>
Bar-shouldered Dove <i>Geopelia humeralis</i>
Wonga Pigeon <i>Leucosarcia picata</i>
Little Pied Cormorant <i>Microcarbo melanoleucos</i>
Cattle Egret <i>Ardea ibis</i>
White-faced Heron <i>Egretta novaehollandiae</i>
Straw-necked Ibis <i>Threskiornis spinicollis</i>
Wedge-tailed Eagle <i>Aquila audax</i>
Yellow-tailed Black-Cockatoo <i>Calyptorhynchus funereus</i>
Rainbow Lorikeet <i>Trichoglossus haematodus</i>
Australian King-Parrot <i>Alisterus scapularis</i>
Pheasant Coucal <i>Centropus phasianinus</i>
Fan-tailed Cuckoo <i>Cacomantis flabelliformis</i>
Satin Bowerbird <i>Ptilonorhynchus violaceus</i>
Spotted Pardalote <i>Pardalotus punctatus</i>
Eastern Spinebill <i>Acanthorhynchus tenuirostris</i>
Lewin's Honeyeater <i>Meliphaga lewinii</i>
Yellow-faced Honeyeater <i>Lichenostomus chrysops</i>
Red Wattlebird <i>Anthochaera carunculata</i>
Blue-faced Honeyeater <i>Entomyzon cyanotis</i>
Noisy Friarbird <i>Philemon corniculatus</i>
Eastern Whipbird <i>Psophodes olivaceus</i>
Pied Butcherbird <i>Cracticus nigrogularis</i>
Pied Currawong <i>Strepera graculina</i>
White-winged Chough <i>Corcorax melanorhamphos</i>
Jacky Winter <i>Microeca fascinans</i>

Seasonal Visitors	
Eastern Koel <i>Eudynamys orientalis</i>	Oct-Feb
Channel-billed Cuckoo <i>Scythrops novaehollandiae</i>	Sep-Jan
Dollarbird <i>Eurystomus orientalis</i>	Nov- Feb
White-throated Gerygone <i>Gerygone albogularis</i>	Aug-Apr
Cicadabird <i>Coracina tenuirostris</i>	Nov-Jan
Rufous Whistler <i>Pachycephala rufiventris</i>	Aug-Feb
Mistletoebird <i>Dicaeum hirundinaceum</i>	Nov-Apr

The number of species recorded in any week varies from a minimum of 12 to a maximum of 42. There is a distinct pattern in the annual variation in the average number of species recorded weekly (Figure 1). Between the 4th week of August and the end of January the number of species averaged over 26.5, while between February and the 3rd week of August the average was always below this figure. The average number of species recorded over the whole eight years for the Spring/Summer period was 27.2 and for the Autumn/Winter period 23.1, a difference of 4.1. This pattern persists, though reduced to a difference of 2.9, when the seasonal migrants are excluded. Whether this reflects a reduced number of species in the winter, or whether the birds are simply quieter and less noticeable, is not known. There is a small peak in the number of species seen towards the end of March which may be a consequence of the presence of migrants on passage. The consistency in the number of species during the two periods suggests that although recording was on a casual basis it does provide a reliable record of the bird population, at least for the regular species.

Figure 1. Annual variation in the average number of species seen weekly.



Species which Increased

The Reporting Rates of a number of species including the Bar-shouldered Dove, Yellow-tailed Black-Cockatoo, Little Corella *Cacatua sanguinea*, Eastern Rosella, Eastern Koel, Eastern Spinebill, Red Wattlebird and Spotted Pardalote increased during the study (Figures 2 and 3).

Three new species, not present in the first few years, have appeared: the Rainbow Lorikeet *Trichoglossus haematodus* (first seen July 04), Blue-faced Honeyeater (October 04) and Little

Corella (September 05). There have also been occasional visits by Long-billed Corellas *Cacatua tenuirostris*. The corellas come from a mixed colony which has recently established itself a few kilometres away at Seaham. The honeyeaters have been attracted by the native garden (particularly the grevilleas) as it has grown and matured. The reason for the increase in the lorikeets is unclear as they feed in the flowering eucalypts and there does not appear to have been any significant change in the suitability of the survey site during the study. They also favour the palms for the short period when these are in flower.

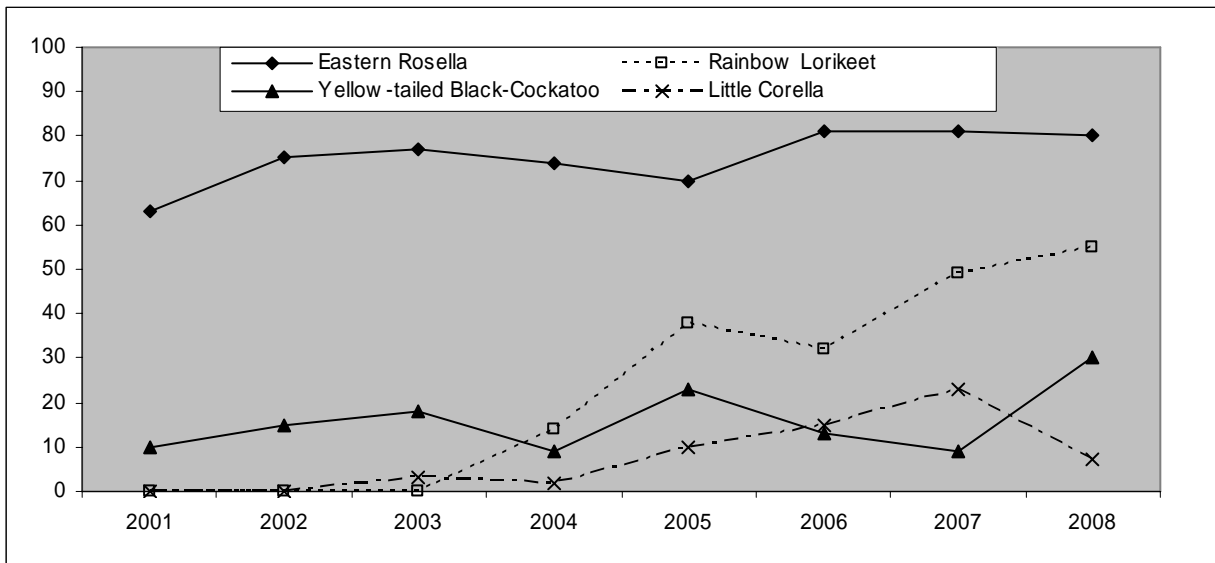


Figure 2. Reporting rates (percentage) of species which increased.

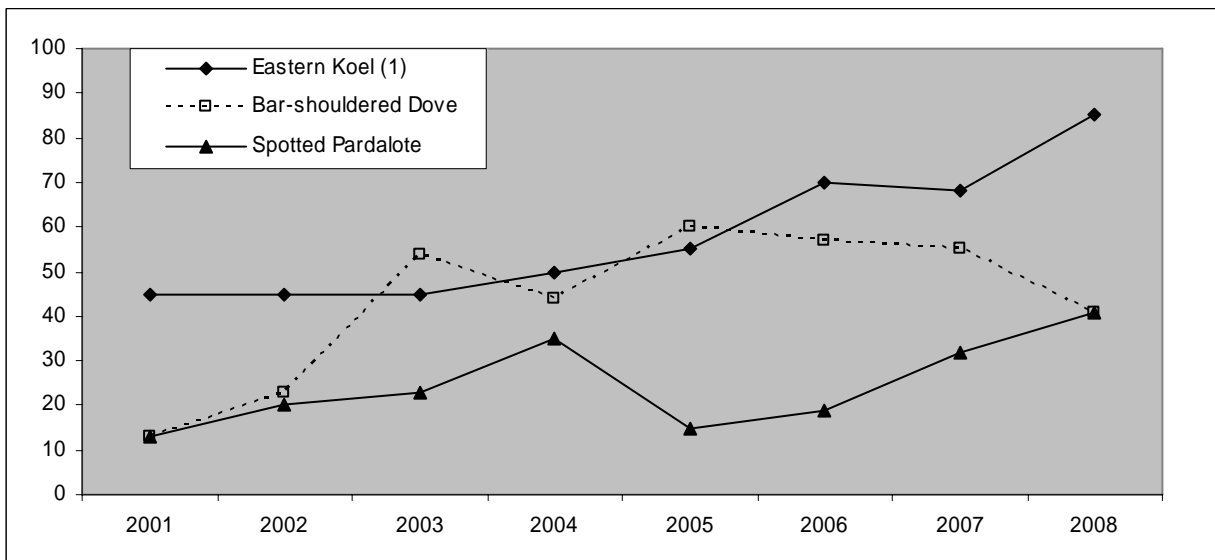


Figure 3. Reporting rates (percentage) of species which increased. (1) Data for the Eastern Koel are a percentage of the summer weeks only (Oct-Feb).

Species which Decreased

Three birds have not been recorded for several years although they remain relatively common in the region. These are Golden Whistler *Pachycephala pectoralis* (last seen August 02), Yellow-rumped Thornbill *Acanthiza chrysorrhoa* (January 03) and White-breasted Woodswallow *Artamus leucorhynchus* (April 03).

Species showing an ongoing decline were the Little Black Cormorant *Phalacrocorax sulcirostris*, Wonga Pigeon, Pallid Cuckoo *Cacomantis pallidus*, White-throated Gerygone, Black-faced Cuckoo-shrike, and Jacky Winter (**Figure 4**). A Little Pied Cormorant *Microcarbo melanoleucos* remains a frequent visitor.

Effect of Butcherbirds

The Reporting Rates of a number of small birds declined or ceased between 2002 and 2006 but showed a temporary revival in September 2006 (**Figure 5**). This appears to be related to the presence or absence of a pair of Grey Butcherbirds around the house. Grey Butcherbirds had always been among the visitors to the property but, in October 2001 a very vocal pair took up residence near the house. Although no aggressive behaviour towards the small birds was observed, butcherbirds are known predators and it was suspected that they may be responsible for the sudden decline in the prevalence of many of the smaller species. This theory received dramatic support in September 2006. Near the end of August, one of the butcherbirds was found dead and the other disappeared. There followed a five-week period during which there was an explosion of small birds around the house. This is illustrated in the following graphs (**Figures 5 and 6**). However, these trends in Reporting Rate do not do full justice to what happened because they do not show the abundance of the birds; there were at least a dozen Eastern Spinebills and twenty plus Silvereyes *Zosterops lateralis* present (after an absence of four years). In early October, the butcherbirds returned. Whether this was a new pair or one of the originals with a new partner is not known. They again became resident around the house although they were never as vocal as the earlier pair. There was an immediate drop in the number of small birds with some species disappearing again over the next few months.

The effect of the butcherbirds' absence is more dramatically shown in **Table 1**, where the

Reporting Rates are shown for periods corresponding to changes in the presence of the butcherbirds.

Table 1. Impact of the presence of Grey Butcherbirds on the Reporting Rates (RR) of other bird species.

	Prior to 10/01	10/01 to 8/06	Sept 2006	10/06 to 3/07
Butcherbird status	Inter-mittent	Perm-anent	Absent	Perm-anent
Reporting Rate	RR (%)	RR (%)	RR (%)	RR (%)
Grey Butcherbird	19	93	0	100
Superb Fairy-wren	44	0.5	100	0
Grey Fantail	75	7	75	4
Double-barred Finch	19	2	0	0
Red-browed Finch	6	0.5	50	0
White-throated Gerygone	38	27	50	21
Lewin's Honeyeater	75	10	75	8
Yellow-faced Honeyeater	81	8	100	21
Jacky Winter	81	49	50	17
Spotted Pardalote	25	20	75	13
Silvereye	31	0	50	4
Varied Sittella	13	1	0	0
Eastern Spinebill	75	17	100	63
Yellow Thornbill	13	2	0	0
Yellow-rumped Thornbill	31	105	0	0
Willie Wagtail	100	45	75	38
Welcome Swallow	100	63	80	75
Rufous Whistler	25	21	40	4

Although the data appear to strongly support the butcherbird theory, there remain some anomalies. For example, the revival of the Double-barred Finches *Taeniopygia bichenovii*, such as it was, occurred in February 2007, several months after the return of the butcherbirds and is presumably an unrelated occurrence.

Honeyeaters

With the Red Wattlebird, Eastern Spinebill, Lewin's Honeyeater and Yellow-faced Honeyeater, we appear to have two conflicting trends. They suffered a similar collapse to the other small birds in 2002, assumed to be a consequence of the butcherbirds' presence, but not only has their revival been permanent, they have continued to increase, despite the butcherbirds' return (**Figure 6**). This is considered most likely due to the maturing of the native garden.

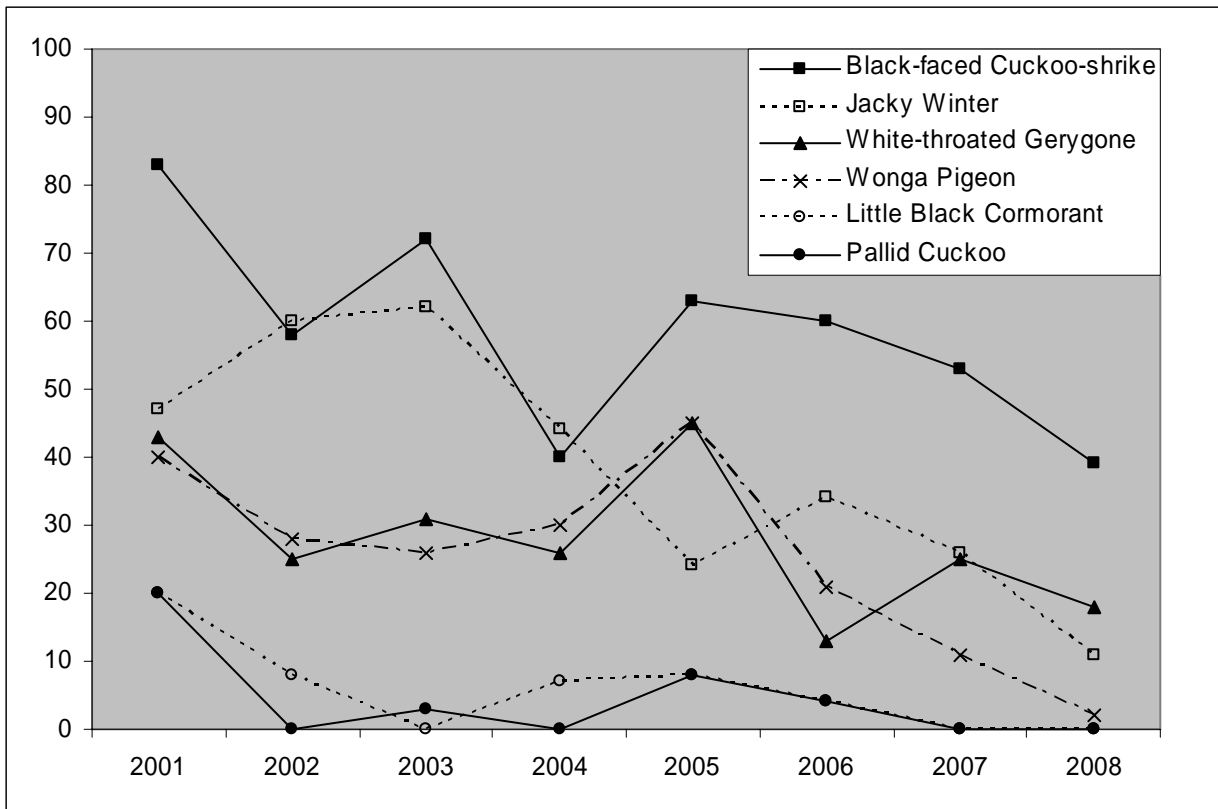


Figure 4. Annual reporting rates (percentage) of species which have declined.

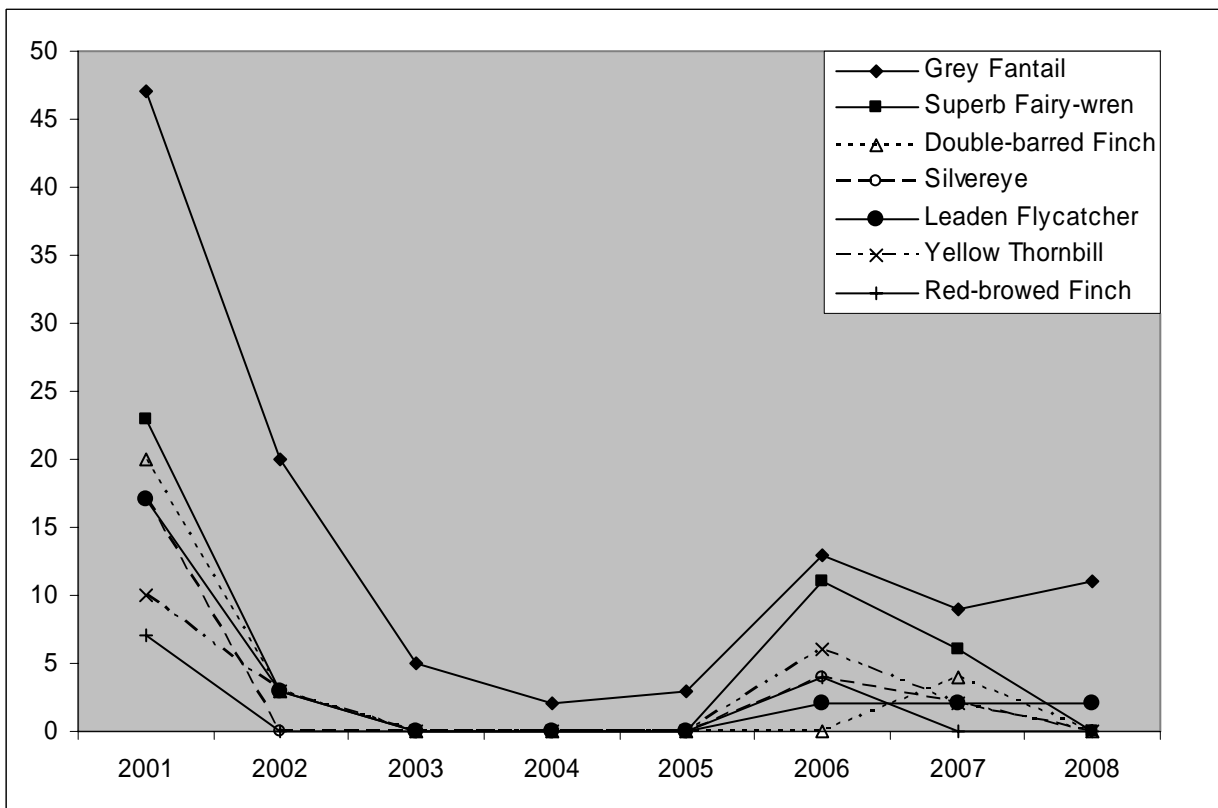


Figure 5. Impact of Grey Butcherbirds' absence for 5 weeks in September 2006 on the annual reporting rates of small bird species.

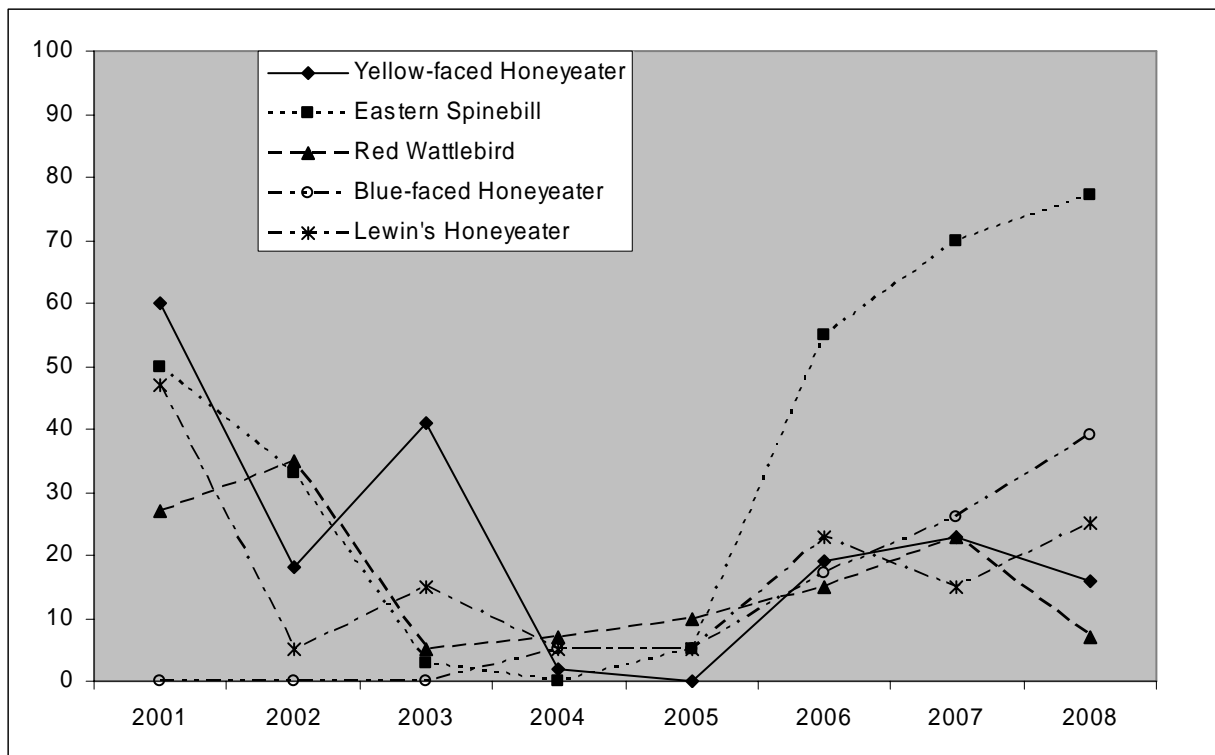


Figure 6. Variation in annual reporting rate (percentage) of honeyeater species.

The Blue-faced Honeyeaters, which were not present originally, have also been attracted by the native shrubs and appear unaffected by the presence of the butcherbirds. Perhaps their size and aggressive nature makes them a match for predators, although one would have expected the same argument to apply to the Red Wattlebird. In addition to providing food for the nectar-feeders, the shrubs as they increase in size provide cover, which may explain the rather surprising resurgence of the smaller-sized spinebills.

Ducks

Australian Wood Ducks and Pacific Black Ducks are resident on the dams on this and adjacent properties while Chestnut Teal *Anas castanea* are frequent visitors. The teal are particularly attracted to *Azolla*, a native floating aquatic fern when this is present on the dam. Between July and September of 2002 and again in December of that year, Hardheads *Aythya australis* were present, although not seen before or since. A surprise omission from the record is the Grey Teal *Anas gracilis*. These are relatively common in the local area but have never been recorded at this site although there are nine farm dams within half a kilometre. Perhaps there is something about the size or layout of this and the adjacent dams that deter them.

Breeding

Birds that have bred successfully at this site are Grey Butcherbird, Noisy Miner *Manorina melanocephala*, Noisy Friarbird *Philemon corniculatus*, Masked Lapwing and Grey-crowned Babbler. A pair of Tawny Frogmouths *Podargus strigoides* produced two chicks one year but lost them to a goanna before they fledged. Australian Magpies and Tawny Frogmouths have built nests but abandoned them. A Crested Pigeon has nested in the same callistemon three years running but has yet to produce a chick. Satin Bowerbirds and Mistletoebirds have also nested, only to have their nests destroyed by predators. Although they have not nested on the site, Australian Wood Ducks and Pacific Black Ducks have appeared with young but have suffered large losses. Young Australian Magpies, Laughing Kookaburras and Galahs are around every summer, indicating that these birds also breed regularly in the immediate vicinity, although not on this property. On one occasion, a young Noisy Miner fell out of the nest and being unable to get back, perched on a branch lower down. Within 15 minutes, it was taken by a Brown Goshawk *Accipiter fasciatus* although no goshawk had been recorded in the previous 12 months. This reinforces the notion that more birds are around than are recorded.

Grey-crowned Babblers

There are several clans of Grey-crowned Babblers, a species listed as “vulnerable” under the *NSW Threatened Species Conservation Act 1995*, within a few kilometres and one clan resident on the site. This group originally consisted of seven birds which increased to ten and then declined until only two were left. This pair has bred successfully on a number of occasions but several of the chicks have died from an unknown cause. Others have disappeared and are assumed to have died rather than joining another clan. It is not certain that the two remaining birds are the original pair or some of their offspring. On one occasion, the four birds, two adults and two young, hopped about on the grass very noisily for several days after the young left the nest. Then one of the young was found dead and the birds’ behaviour immediately changed. The surviving young bird was parked in a callistemon where it remained quietly for about a week while the adults fed it, before emerging and beginning to forage again with the adults.

Migrants

Among the seasonal visitors, the Channel-billed Cuckoos *Scythrops novaehollandiae* are particularly punctual, always arriving in the second week of September. They are also the first of the migrants to disappear although their departure is a little more drawn out, their raucous call sometimes being heard into February. It appears that a few of the White-throated Gerygones and Mistletoebirds over winter, as they have occasionally been recorded through the winter months. In some summers (02/03, 03/04, 05/06, 06/07), the Cicadabird has not been recorded at all. The Rufous Whistlers are very variable in their

occurrence. In some years they have been recorded as early as August, while in others the first record has not been until December. The last record of the summer also varies between December and February. In two years (01 and 02) they were recorded throughout the winter.

CONCLUSIONS

The observation and recording of the bird species at this site has proved a fascinating pastime. Some of the changes observed can be plausibly explained while others remain unresolved. The number of possible factors influencing bird movements is such that a much longer study and co-ordination with investigations at other sites would be needed before further explanations could be expected. The 119 species recorded during the eight years of this study is in line with studies by the Hunter Bird Observers Club in the area and at Butterwick near Paterson, 10 kilometres to the west (Newman 2007). It demonstrates that a large but relatively isolated rural garden provides important bird habitat. Planting native shrubs has attracted a number of smaller species by providing both food and shelter from predators. Grey Butcherbirds when resident have a profound adverse impact on the smaller species of birds which is probably exacerbated by the isolation of the site from surrounding bushland.

REFERENCE

- Newman, M. (2007). Bird population of a cattle property near Paterson, NSW - an eleven year study. *The Whistler* 1: 46-48.