

A Study of the Birds of Sandy Creek Conservation Park
and the Old Barossa Gold-fields from 1966 to 1993

by

Barry R. Hutchins



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About the author

Barry Hutchins' passion for birds began 58 years ago when he obtained two pairs of homing pigeons. Since then his interest has expanded to include many facets of ornithology and aviculture, as diverse as becoming an honorary A class bird bander, and a cage bird judge at SA and NSW shows.

Barry has always been keen to share his enthusiasm and knowledge, and has presented lectures in America and most states of Australia. He has published over 120 articles on birds, including co-authoring *Australian Parrots A Field and Aviary Study* and being a regional organizer for the *Australian Bird Atlas 1998-2002*.

He has been office bearer, patron, and honorary life member of such organizations as the Avicultural Society of South Australia Inc and the Adelaide Ornithologists Club Inc. For nine years he was chairman of the South Australian National Parks Consultative Committee for Keeping and Trading in Native Fauna.

Recognizing the integral links between birds and their environment, he has been recipient of the National Parks Foundation of South Australia Award for 'many years of interest in the work of the Foundation and practical understanding of the principals of retaining significant vegetated land for biodiversity now and for future generations.' With his wife Ruby he is also joint patron of Friends of Sandy Creek Conservation Park, and in 2000 they were awarded a South Australian National Parks and Wildlife Gold Life Entitlement Award for their work for conservation.

Some of his awards include, in 1983, an Avicultural Federation of Australia Award for Achievements in Aviculture Research and an Avicultural Society of Australia Award for Aviculture and Ornithological Research. In 2000 Barry was awarded the Order of Australia for services to ornithology and aviculture.

This current work is the culmination of one of the longest, continuous studies of its kind in Australia by an individual, and its publication is timely as areas such as Sandy Creek Conservation Park and the Old Barossa Gold-fields face increasing pressure from near-by development.

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Introduction

My family originated from Gawler and when I was quite young, we moved to Adelaide. Many of my relatives remained, which gave me the opportunity to re-visit, and as a young person, explore the surrounding areas by walking along dirt tracks and through bushland in the 1940s.

On occasional trips into the Old Barossa Gold-fields by horse and buggy I was amazed at the dense bushland, creeks with running water and the various sounds of bird life; these excursions were a source of great enjoyment.

Many years later I was given the opportunity to explore the region in depth with the aim of studying the local bird life. In 1962 I was invited to join The Adelaide Ornithologists Club Inc., and during that time I was introduced to Max Waterman and Vic Woods, both bird-banders (Max was South Australian regional organizer for CSIRO Bird Banding Scheme, Canberra and Vic was a curator of bird skins at the South Australian Museum, Adelaide). During 1964-65-66 I accepted an invitation to accompany them (separately) on bird-banding field trips. That experience gave me a grounding in the use of mist nets, location selection for mist nets and collating banding data. The aim of my project, which began in 1966, was to study the seasonal movements of birds within a nine km radius of Sandy Creek by banding and recapture, with details on the life history of resident, nomadic and migratory species.

Sandy Creek, situated approximately 52 km north-north-east of Adelaide, is on the northern edge of the southern Mount Lofty Ranges and lies between the townships of Gawler and Lyndoch in the southern Barossa Valley. Included within this area are Sandy Creek Conservation Park, the northern section of Para Wirra Recreation Park, the Barossa Reservoir and the Old Barossa Gold-fields. (figure 1)

At the outset of the assignment I decided it would not be practical to band birds at random but rather to carefully select a few sites for the duration of the project. Having had prior knowledge of the region through bird observing, the selection of sites took into account areas that contained water points, canopy with good understorey, regular movement of birds and positions that were away from public interference. It was these factors that decided that the Old Barossa Gold-fields and the Sandy Creek Conservation Park (figure 2) were chosen as the major banding areas.

The native vegetation in both regions ranges from sclerophyll forests with moderate to dense understorey, typical of the Mount Lofty Ranges, to the more open savannah on sandy soils, and to the stony slopes in drier areas. The avifauna, also, shows an intergradation between species; there are species that are confined, largely, to the denser vegetation of the Mount Lofty Ranges and species from the more arid regions, north and east of the Range.

Apart from a 10-year observational survey of Sandy Creek Conservation Park by Rix (1976) no other detailed information on this region exists. The taxonomy in this paper follows Christidis and Boles (1994) and Schodde and Mason (1999), and summarizes my observations on birds from 1966 to 1993 within nine km of Sandy Creek.

Figure 1
Sandy Creek and surrounding study area

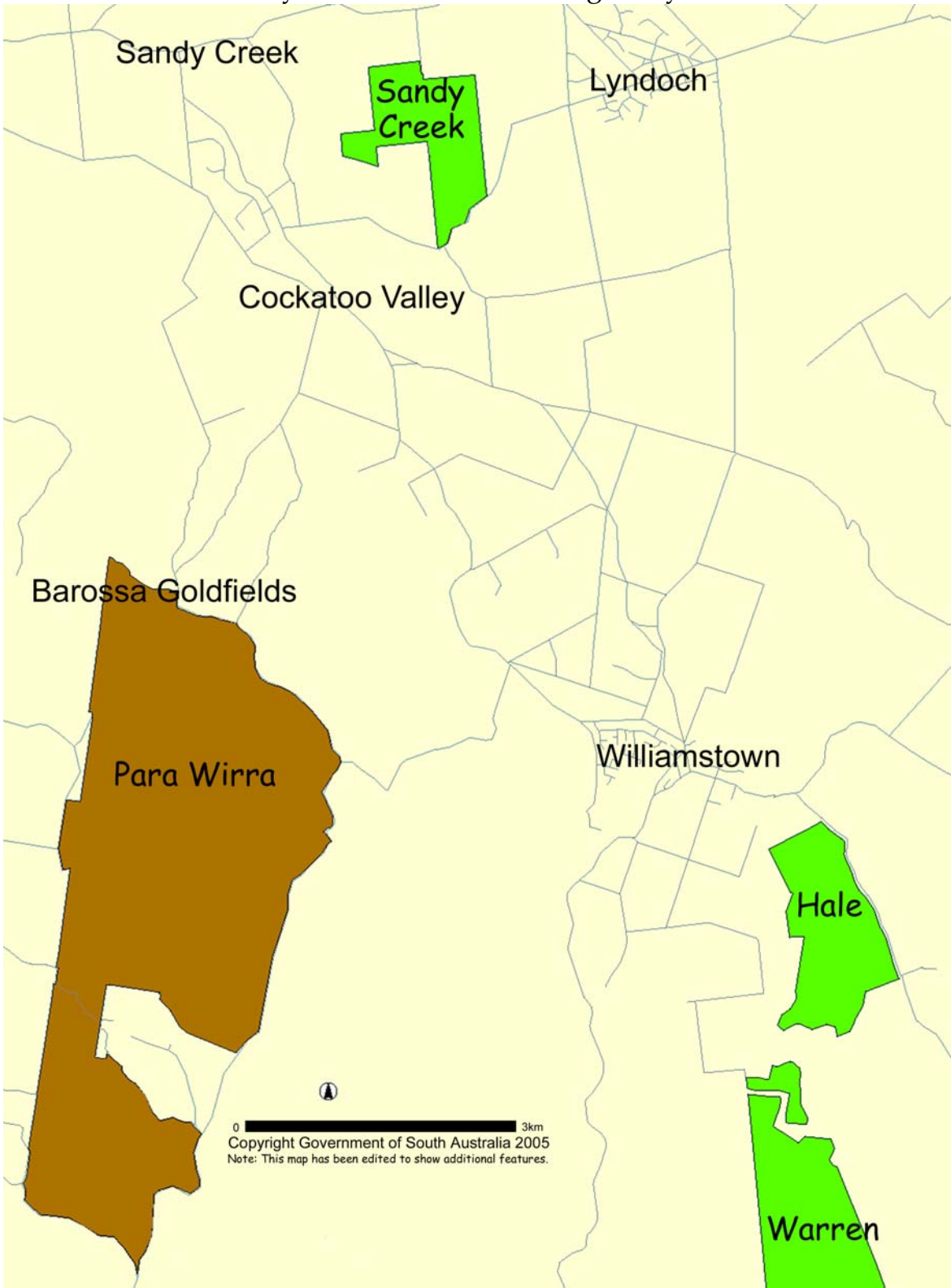


Figure 2
Sandy Creek Conservation Park



Study areas and methods

Banding sites were deliberately chosen to gain maximum banding of species and the recapture for longevity records, degree of movement between banding sites and fluctuations of bird populations brought about by seasonal conditions (table 1). A visual census of bird species during the banding project would also be addressed (tables 1, 4 and Appendix).

The difference in terrain and some vegetation in Sandy Creek Conservation Park and the Old Barossa Gold-fields showed a separation or preference by some bird species for one location or the other.

In this project I used three and four shelf Terylene mist nets of varying lengths. If the weather was calm (with little or no wind) I would open the shelf strings out. This allowed enough pocket for the birds to drop into from each side of the net. When the conditions were windy, the shelf strings would be moved closer together to form a deeper pocket. This was not the ideal situation unless the birds were flying in the same direction as the wind.

After banding or on observation days only, I walked a set path which was the same each time and, as a general rule, took 20 minutes to walk around three hectares, this was in the comfort zone for me.

Lack of time was a problem when observing for the day, particularly during winter months. Owing to early darkness I would rely on hearing as well as visual contact. In Sandy Creek Conservation Park from 1966 to 1987 the regular species count was 37 to 40. A decline in bird numbers and species started shortly after that period; by 1993, 32 species was a good day's count. The Barossa Gold-fields were different, (except for the Barossa Reservoir area) birds were variable in species and numbers, with 25 species observed on a good day.

List of sites

Old Barossa Gold-fields banding sites

- Site 1: Para Crossing
- Site 2: Hill Top
- Site 3: Gully Track

Sandy Creek Conservation Park banding sites

- Site 4: North Park
- Site 5: Ruins
- Site 6: South Park
- Site 7: South West Park

Site 1: Para Crossing

The most distant southern site (site 1: Para Crossing) (34° 40' 55"; 138° 50' 46") from Sandy Creek had good bird movement but was least productive due to a picnic area at the South Para River frequented by people and dogs. Although, I hasten to add, the location produced Black Honeyeaters and White-browed Woodswallows not captured at any other site and both were rare visitors to the total area under study.

Site 2: Hill Top and Site 3: Gully Track

Two other southern sites were linked together; the higher location (site 2: Hill Top) (34° 38' 42"; 138° 49' 42") was slightly below the top of the hilly woodland with trees to five metres and good understorey of Flame Heath *Astroloma conostephioides*; Fringe-myrtle *Calytrix tetragona*; Tufted Grass-tree *Xanthorrhoea semiplana*; Native Fuschia *Correa reflexa* and Needle-bush *Hakea rugosa* and *H. rostrata*.

Below and joining this site were two close gullies running east for approximately 300 metres with open tree canopy and good low understorey along the banks. Both gullies ran into a flat area (site 3: Gully Track) (34° 38' 57"; 138° 49' 47") with a small dam bordered by *Melaleuca spp* and *Eucalyptus spp*, before continuing down the hillside with a dominance of taller eucalypts with less understorey.

Winter months were preferred for banding at these two sites. Although it was wet and windy the birds tended to keep to the understorey and move from an easterly direction upwards along the gullies spreading out along the ridges. Yellow-faced Honeyeaters and White-naped Honeyeaters would move together sometimes in very vocal flocks. It seems that these two gullies were corridors for these species, as well as others, particularly if birds were moving in an easterly or westerly direction (table 4).

On banding mornings I usually arrived on site just after sunrise and commenced setting the mist nets in position. During the colder winter months there would be little movement other than the various birdcalls. By 09.00 hours activity could be noticed, especially if shrubs or trees were flowering and providing food.

Birds seem to have a quiet period during the day where the busy hustle of the mornings tends to slow by about 12.30 hours and gradually increase again at approximately 14.30 hours onwards. This slowing, or rest period, tends more towards honeyeaters, parrots and cockatoos, than pardalotes, wrens, robins and other fly-catching species.

Depending on bird movements nets would be taken down in most cases at 15.30 hours; this would allow bird observing in other project areas.

If I found a continuing influx of birds when the nets were set I would remove the birds and furl some of the nets (close the shelf strings together and secure cords along the length of the net reducing the number of nets in use). This practice made it easier to open the nets during the quiet period and in most cases they remained open until I finished banding for the day.

When the nets were cleared the captive birds were taken a short distance to a banding table where details on species, age, sex (if possible) and band numbers were documented. Once a bird had been processed it was released at the banding spot.

At the top section of the gully (site 2: Hill Top) four nets were used; one 12m x 2.7m and three 9m x 2.7m. These were set along flight paths that were parallel to thick vegetation.

At the bottom of the gully (site 3: Gully Track) one 18m x 2.7m and three 9m x 2.7m nets were used; two were set along open sections of tall, thick vegetation and two near a small dam with vegetation as a back-drop.

In addition, with the help of an assistant, two nets were added along the gullies; one running parallel on the northern side with the other at right angles between the two gullies, both with backdrops of vegetation.

Site 4: North Park and Site 5: Ruins

My next two banding sites were in the northern section of Sandy Creek Conservation Park: these were site 4: North Park (34° 36' 16"; 138° 51' 13") and site 5: Ruins (34° 36' 27"; 138° 51' 14"). The first area (site 4: North Park) was at the northern entrance to the park and at that time there were very few visitors and a good cover of understorey. Outside of the park in the north-eastern section was a large disused sand mine (now fully operative), and slightly back on the eastern boundary adjacent to the entrance was a small, old, fruit orchard with areas of good stands of Silver Banksia *B. marginata*.

The soil at this site is deep sand; the terrain slopes to the west through the park giving a water runoff in very heavy rain. Also in the north-eastern section, just outside of the park, there are two soak holes. Good winter rains flow down the sandy slopes, filling the soak holes. When filled, the water remains until after summer, providing a good drinking location for birds.

This area was easy to operate on my own; nets used were one 6m x 2.7m; two 9m x 2.7m and one 12m x 2.7m.

The second northern site in the park (site 5: Ruins) (34° 36' 27"; 138° 51' 14") was adjacent to an old hut with a diverse variety of undergrowth. The vegetation within a 200m radius of the two northern banding sites is characterised by Southern Cypress Pine *Callitris preissii*; Pink Gum *Eucalyptus fasciculosa*; Drooping Sheoak *Allocasuarina verticillata*; Silver Broom-bush *Baeckea behrii*; Common Fringe-myrtle *Calytrix tetragona*; Kangaroo Thorn *Acacia paradoxa*; Umbrella Bush *Acacia ligulata*; Sticky Hop-bush *Dodonea viscosa spatulata*; Wollowa *Acacia calamifolia*; Flame Heath *Astroloma conostephioides*; Tufted Grass-tree *Xanthorrhoea semiplana*; Prickly Tea-tree *Leptospermum continentale* as well as native grasses and various weeds.

This area also has a waterhole that holds water after good winter rains. Nets used in this location were two 6m x 2.7m, two 9m x 2.7m and one 12m x 2.7m.

Site 6: South Park and Site 7: South West Park

Two banding sites in the southern section of the park were chosen; one with a large stand of Silver Banksia *B. marginata* (site 6: South Park) (34° 36' 38"; 138° 51' 15") and the other with a substantial area of Scarlet Bottlebrush *Callistemon rugulosus rugulosus* (site 7: South West Park) (34° 36' 41"; 138° 51' 05"). The banksia were on a gradual sloping sand ridge running north to south, whereas the bottlebrush bordered a low sloping area east to west where water ran if good seasonal rains occurred.

The full length of this water run-off is approximately 450 metres. Although the locations seemed exciting for birds and at times they were, drought conditions over several years affected flowering and gave poor nectar flow.

When banding in these areas I found it quite important to have an assistant, and even then only a small section could be worked effectively. Nets used in the banksia area were one 6m x 2.7m, three 9m x 2.7m, two 12m x 2.7m and one 18m x 2.7m. One day I would work the western end and the next banding day the eastern end. The dominant species was the New Holland Honeyeater at both ends, followed by the silvereyes, which were more prevalent in the eastern section than in the western.

In this location silvereyes were present in autumn and winter, with New Holland Honeyeaters from autumn to spring. The Scarlet Bottlebrush started to flower in early November and this brought New Holland Honeyeaters. If the flowers produced sufficient nectar, calling of the honeyeaters could be heard a hundred metres away. If flowering occurred in November the increase in birds continued into December.

There was a daily movement to and away from the feeding area with a high rate of first year birds. This continued until the food supply was almost finished, usually early January. Nets used were one 6m x 2.7m, five 9m x 2.7m, one 12m x 2.7m and one 18m x 2.7m.

Methods used when banding ducks

Although Australian Wood Ducks have always been scattered throughout the Old Barossa Gold-fields either on rivers, creeks or dams, during January 1971 while driving from Sandy Creek to the Old Barossa Gold-fields, I noticed more Australian Wood Ducks than usual either near dams or grazing in paddocks.

As these ducks were in the project area and a species that can travel substantial distances in search of food, I considered that perhaps a few should be banded, so spoke with the property owners first for permission to be on their land.

In 1971, after obtaining material, a duck trap was built. The light steel frame was 140 cm long, 110 cm wide and 70 cm high, covered with 4 cm diameter wire netting. The bottom was left open. At one end in the centre of the bottom a 27 cm hole was cut and a 40 cm length of wire netting made in the shape of a funnel was connected on the inside to cover the hole. One other funnel with the same dimensions was placed on the bottom of one side.

On the top of the cage the wire was cut in the centre to form an opening for a lift-up wire netting door that was large enough to place a short handle fisherman's landing net in, to place over a duck and remove without trouble. While the door was open a large hessian bag was used to cover the opening.

Once the cage was finished it was placed in a suitable area (where there were ducks and where it was not visible to the public). I spoke to the property owners and explained that their role was very important as the ducks would need to be fed on grain (which was to be spread around the outside of the closed cage) for two days. By the third day, if the food had been eaten, both funnels were to be opened and a trail of grain was to be spread from one metre outside of the cage and into the funnel openings, with plenty of grain spread inside the cage.

The cage-trap was to be set two hours before sunset and inspected an hour after sunrise. As I live 50 km from the project site the owners agreed to phone me in the early morning with the results.

I used this method twice, 28/02/71; 29 ducks, and 07/03/71; 21 ducks. Birds were released on site after I placed a registered CSIRO bird band on the right leg of each bird; 23 females, 27 males, with 8 being first year birds. The capture and release was a success. The property owners went out of their way to help and I thank them for that.

My next interesting observation of Australian Wood Ducks in the Old Barossa Gold-fields was on 10/03/84. I noticed a large number of the species feeding in a barley stubble paddock near a dam. I watched them walking and flying back and forth from the paddock to the dam, counting a total of 314 ducks. I returned to the site later that afternoon with two helpers and two duck nets that I had purchased from the banding scheme earlier. To

my surprise, there were no ducks; it did not concern me as I thought a good number would return to the dam after dark.

The dam was situated on the edge of open woodland (western side) and open paddocks to the east. Owing to the late time, one net only was used. Net size was three shelf, 73 mm mesh, 18 m x 2.4 m. To support the net, three 4m x 2.5 cm round, hollow steel poles were tethered with thick cord to steel pegs in the ground. On the end-loop of each shelf-cord I placed a 3 cm wide rubber band, cut from an old truck tyre tube. This allowed sufficient give to the net once the ducks had been caught.

Our cover was by the trunk of a large River Red Gum *Eucalyptus camaldulensis camaldulensis*. For light we had torches and a gas light. Once dark, we had to rely on our hearing, either ducks calling, beating of wings or the splash of water on their landing. By 22.00 hours there was no sign of a duck. Shortly after, several ducks were heard calling and a splash of water. We waited for another five minutes and with no sign of any more ducks, we approached the dam under torchlight; four ducks flew, one adult female in the net, the other three to the northern side with no net.

Although a check on the ducks was carried out weekly, their numbers were decreasing and it was evident that their movement to the dam at night was almost absent, at least while we were there. We continued with the two nets for several weeks, using six cork decoys on the dam.

Details of captures:

10/03/84, 1 adult female

18/03/84, 2 adult females, 1 adult male, 1 immature male

24/03/84, 2 adult females, 3 adult males

31/03/84, 5 adult females, 2 adult males

14/04/84, 3 adult females, 3 adult males

Each duck was banded in the nets and released on site. The total number of ducks banded was 23.

Of the two methods used in this exercise, the first proved to be superior, providing a person could be on site for placing food for the ducks and to check if any ducks had been captured. The second method would have been more effective under different circumstances, perhaps with a larger dam that ducks would fly to during the night.

Methods used when banding quail

The area surrounding the small town of Sandy Creek is farming with cereal crops and grazing. This type of habitat attracts Stubble Quail and Little Button-quail in the spring and summer. As these species can become quite nomadic I decided to band a few with the hope of recaptures, either within my project area or by other banders some distance away.

To capture Stubble Quail and Little Button-quail, a still, dark night was chosen. With help from property owners the vehicle used was a light truck and the target sites selected were barley stubble paddocks. Once in the paddock, headlights were placed on high beam and once quail had been sighted the headlights were turned off and a hand-held spotlight, which was connected to the vehicle battery, was used.

Standing in the back of the vehicle were two people; one holding a long handle fisherman's landing net and the other the spotlight. Once a quail had been located and held in the spotlight beam on the ground, the person holding the hand-net would approach the bird as quietly as possible on foot and lower the net over the bird. Care also was needed not to stand in the beam of the spotlight to give the quail darkness to fly off. Some birds would remain still on the ground, others would walk slowly through the stubble and a few would take fright and fly off.

Once the bird was captured it was banded and the necessary details recorded and entered into a banding log-book. The birds were not released at the banding site but placed in a cardboard carton 20 cm high with a hessian top to prevent any head damage. The boxes were long and wide enough to hold 12 quail each in comfort. Stubble and Little Button-quail were placed into separate boxes.

As each paddock was completed, all birds were taken, as near as possible, to the paddock centre and released. Each quail was placed individually in the stubble by torch-light, some would walk off and others would fly. This method prevented chasing quail that had been banded earlier and it certainly worked for us.

Banding of quail was also carried out by Max Waterman and his helpers on a large scale at approximately 35 km north-west of our banding sites. I was hoping for a recapture of some of his birds but this did not happen.

Table 1

Summary of captures / recaptures / first year birds and seasonal records of species banded at Sandy Creek Conservation Park, the Old Barossa Gold-fields and three species near the small town of Sandy Creek, South Australia, from 1966 to 1993

Species	Con. Pk	B. Goldflds	Captures	Re-Captures	1st	Su	A	W	Sp
Stubble Quail			75		16	75			
Australian Wood Duck		73	73	16	6	67	6		
Collared Sparrowhawk		2	2					2	
Brown Falcon	1		1				1		
Little Button Quail			17		7	17			
Spotted Turtle-Dove	3		3			2			1
Common Bronzewing	13		13		3	8	1	1	3
Crested Pigeon	7		7			2	2	2	1
Diamond Dove	8		8		1	1	6		1
Peaceful Dove	243	8	251	179	55	70	103	30	48
Musk Lorikeet	2		2			2			
Crimson Rosella (Adelaide)	3	2	5		3	1	2		2
Red-rumped Parrot	6	3	9			1		8	
Fan-tailed Cuckoo	1		1				1		
Horsefield's bronze-Cuckoo	6		6	1		3	1		2
Tawny Frogmouth		1	1			1			
Rainbow Bee-eater	3		3	2					3
Brown Treecreeper	2	5	7		1			3	4
Superb Fairy-wren	79	59	138	82	32	47	28	41	22
Spotted Pardalote	1	8	9			1	2	6	
Yellow-rumped Pardalote	3	1	4		1	1		1	2
Striated Pardalote	53	24	77	4	21	24	5	24	24
Weebill	6	15	21	1		8	3	6	4
Brown Thornbill	14	15	29	9		2	8	18	1
Chestnut-rumped Thornbill	6		6	1		2		1	3
Buff-rumped Thornbill	61	56	117	50	1	23	31	51	12
Yellow-rumped Thornbill	57	23	80	9	10	22	18	26	14
Yellow Thornbill	31	52	83	41	1	7	23	46	7
Striated Thornbill	3	60	63	51			27	27	9
Southern Whiteface	1		1					1	
Red Wattlebird	68	31	99	4	21	20	19	30	30
Little Wattlebird	34		34	1	7	14	6	1	13
Noisy Miner	2		2			1		1	
Yellow-faced Honeyeater	86	826	912	41	254		285	604	23
Singing Honeyeater	1		1					1	
Yellow-plumed Honeyeater	3		3		1	1		2	
White-plumed Honeyeater	718	65	783	245	278	161	138	372	112
Black-chinned Honeyeater	17		17	7	7	8	2	2	5
Brown-headed Honeyeater	107	44	151	84	53	31	65	30	25
White-naped Honeyeater	35	237	272	5	123	3	102	166	1
Crescent Honeyeater	19	174	193	45	22	2	86	100	5
New Holland Honeyeater	2141	330	2471	414	1082	668	689	264	850
White-fronted Honeyeater	5	8	13				3		10
Tawny-crowned Honeyeater	6	1	7			2	3	1	1
Eastern Spinebill	86	214	300	84	121	40	144	86	30
Black Honeyeater		3	3						3
Crimson Chat	6		6		5				6
White-fronted Chat	1		1						1
Jacky Winter	7	1	8				2	5	1
Scarlet Robin	3	25	28	12	3	2	7	17	2
Red-capped Robin	59	4	63	22	29	24	22	5	12
Rose Robin		1	1				1		
Hooded Robin	41	6	47	25	8	17	18	3	9
White-browed Babbler	37		37	19	1	15	9	6	7
Varied Sittella	11	3	14	2	1	2	7	3	2
Crested Shrike-tit	13	2	15	5			9	4	2
Golden Whistler	45	38	83	26	25	15	23	31	14
Rufous Whistler	56	9	65	14	19	15	7	15	28
Grey Shrike-thrush	21	15	36	3	9	6	5	8	17
Restless Flycatcher	3		3			2	1		
Magpie-lark	5		5		2		1	1	3

Species	Con. Pk	B. Goldfids	Captures	Re-Captures	1st	Su	A	W	Sp
Grey Fantail	16	39	55	6	2	1	25	26	3
Willie Wagtail	71	5	76	14	30	37	15	10	14
Black-faced Cuckoo-shrike	1		1				1		
White-winged Triller	14	2	16		4	3			13
White-browed Woodswallow		13	13		5				13
Australian Magpie (white backed)	8		8		1	5	1		2
Grey Currawong	3	1	4			2	2		
Australian Raven	1		1			1			
White-winged Chough		2	2					1	1
Richard's Pipit	1	4	5			2			3
House Sparrow	14	1	15	1	6	12		1	2
Zebra Finch	162	1	163	34	38	87	51	3	22
Red-browed Finch	14	54	68	2	1	13	23	27	5
Diamond Firetail	123	8	131	22	32	40	50	12	29
European Greenfinch	160	4	164	11	27	80	44	15	25
European Goldfinch	110	1	111	7	16	34	49	11	17
Mistletoebird	19	35	54	6	21	12	8	21	13
Welcome Swallow		3	3					3	
Tree Martin		4	4			4			
Rufous Songlark	4	1	5	2	1			2	3
Silvereye	951	591	1542	350	205	370	545	523	104
Common Blackbird	30	13	43	12	20	17	9		17
Common Starling	2		22		20	20		1	1
Totals	5953	3226	9291	1971	2658	2176	2745	2708	1662

Birds banded away from Sandy Creek Conservation Park and Old Barossa Gold-fields (included in 'Captures' in table above)

Stubble Quail	1km NW Sandy Creek	75
Little Button Quail	1km NW Sandy Creek	17
Common Starling	1km S Sandy Creek	20

Summary

		Banding Days	Mean Annual Rainfall
Total captures Sandy Creek Conservation Park (Con. Pk)	5953	176	559mm
Total captures Old Barossa Gold-fields (B. Goldfids)	3226	81	621mm
Total captures (Captures)	9291		
Total re-captures (Re-Captures)	1971		
Including re-captures Sandy Creek Conservation Park	1379		
Including re-captures Old Barossa Gold-fields	592		
First year birds (1 st)	2658		
Summer (Su)	2176		
Autumn (A)	2745		
Winter (W)	2708		
Spring (Sp)	1662		

Summary of selected species that are sexually dimorphic - only birds that the sexes were discernible were listed

The totals include some sexable 1st year birds, refer Captures list Table 1

	Con. Pk	Male	Female	B. Goldfids	Male	Female
Brown Treecreeper	2	2		5	3	1
Crescent Honeyeater	19	15	4	174	90	77
Eastern Spinebill	86	34	23	214	71	89
Scarlet Robin	3	3		25	11	11
Red-capped Robin	59	25	12	4	3	1
Hooded Robin	41	17	19	6	2	4
Varied Sitella	11	7	3	3	2	1
Crested Shrike-tit	13	6	7	2	1	1
Golden Whistler	45	9	28	38	5	14
Rufous Whistler	56	21	17	9	7	2
Zebra Finch	162	70	63	1		1
Mistletoebird	19	13	6	35	16	9
Totals	516	222	182	516	211	211

Table 2
 Species observed and not banded in
 Sandy Creek Conservation Park from 1966 to 1993

Stubble Quail *Coturnix pectoralis*
 White-faced Heron *Egretta novaehollandiae*
 Black-shouldered Kite *Elanus axillaris*
 Whistling Kite *Haliastur sphenurus*
 Brown Goshawk *Accipiter fasciatus*
 Collared Sparrowhawk *Accipiter cirrhocephalus*
 Wedge-tailed Eagle *Aquila audax*
 Little Eagle *Hieraaetus morphnoides*
 Spotted Harrier *Circus assimilis* – November 1975
 Australian Hobby *Falco longipennis*
 Black Falcon *Falco subniger* – February 1967; March 1967; May 1971
 Peregrine Falcon *Falco peregrinus*
 Nankeen Kestrel *Falco cenchroides*
 Painted Button-quail *Turnix varia*
 Banded Lapwing *Vanellus tricolor* – September 1969; August 1972
 Masked Lapwing *Vanellus miles*
 Rock Dove *Columba livia*
 Brush Bronzewing *Phaps elegans* – October 1968
 Barbary Dove *Streptopelia risoria* – March 1981, Exotic, escapee (two birds)
 Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus* – October 1981
 Galah *Cacatua roseicapilla*
 Little Corella *Cacatua sanguinea*
 Sulphur-crested Cockatoo *Cacatua galerita*
 Cockatiel *Nymphicus hollandicus*
 Rainbow Lorikeet *Trichoglossus haematodus*
 Purple-crowned Lorikeet *Glossopsitta porphyrocephala*
 Blue Bonnet *Northiella haematogaster haematogaster* – January 1971 (probable escapee)
 Budgerigar *Melopsittacus undulatus* – October, November 1978, 1984, 1985
 Blue-winged Parrot *Neophema chrysostoma* – October 1966
 Elegant Parrot *Neophema elegans*
 Pallid Cuckoo *Cuculus pallidus*
 Black-eared Cuckoo *Chrysococcyx osculans* – October 1973
 Shining bronze-Cuckoo *Chrysococcyx lucidus*
 Southern Boobook *Ninox novaeseelandiae* – January 1967
 Barn Owl *Tyto alba*
 Tawny Frogmouth *Podargus strigoides*
 Spotted Nightjar *Eurostopodus argus* – October 1966; July, October 1972
 Australian Owlet-nightjar *Aegotheles cristatus* – November 1969; December 1984
 Laughing Kookaburra *Dacelo novaeguineae*

Red-backed Kingfisher *Todiramphus pyrrhopygia* - October 1969; November 1972;
December 1973
Sacred Kingfisher *Todiramphus sanctus* - October 1966, 1968; November 1969;
December 1972
White-throated Gerygone *Gerygone olivacea* - February 1982
Fuscous Honeyeater *Lichenostomus fuscus* - February 1985
Black Honeyeater *Certhionyx niger* - November, December 1985
Orange Chat *Epthianura aurifrons* - November 1968
White-browed Woodswallow *Artamus superciliosus* - February 1968; November 1985
Dusky Woodswallow *Artamus cyanopterus*
Grey Butcherbird *Cracticus torquatus leucopterus* - April 1969
Little Raven *Corvus mellori*
White-winged Chough *Corcorax melanorhamphos whiteae*
Singing Bushlark *Mirafra javanica secunda*
Eurasian Skylark *Alauda arvensis*
Welcome Swallow *Hirundo neoxena*
Tree Martin *Hirundo nigricans*
Fairy Martin *Petrochelidon nigricans neglecta*
Brown Songlark *Cincloramphus cruralis*

Note: Dates define unusual sightings

Table 3
 Species observed and not banded in
 Old Barossa Gold-fields from 1966 to 1993

Emu *Dromaius novaehollandiae*
 Blue-billed Duck *Oxyura australis*
 Musk Duck *Biziura lobata*
 Black Swan *Cygnus atratus*
 Australian Shelduck *Tadorna tadornoides*
 Mallard *Anas platyrhynchos*
 Pacific Black Duck *Anas superciliosa*
 Australasian Shoveller *Anas rhynchotis*
 Grey Teal *Anas gracilis*
 Chestnut Teal *Anas castanea*
 Pink-eared Duck *Malacorhynchus membranaceus*
 Hardhead *Aythya australis*
 Australasian Grebe *Tachybaptus novaehollandiae*
 Hoary-headed Grebe *Poliiocephalus poliocephalus*
 Great Crested Grebe *Podiceps cristatus*
 Darter *Anhinga melanogaster*
 Little Pied Cormorant *Phalacrocorax melanoleucos*
 Pied Cormorant *Phalacrocorax varius*
 Little Black Cormorant *Phalacrocorax sulcirostris*
 Great Cormorant *Phalacrocorax carbo*
 Australian Pelican *Pelecanus conspicillatus*
 White-faced Heron *Egretta novaehollandiae*
 Little Egret *Egretta garzetta*
 White-necked Heron *Ardea pacifica*
 Great Egret *Ardea alba*
 Nankeen Night Heron *Nycticorax caledonicus*
 Australian White Ibis *Threskiornis molucca*
 Straw-necked Ibis *Threskiornis spinicollis*
 Royal Spoonbill *Platalea regia*
 Yellow-billed Spoonbill *Platalea flavipes*
 Black-shouldered Kite *Elanus axillaris*
 Black Kite *Milvus migrans*
 Whistling Kite *Haliastur sphenurus*
 Swamp Harrier *Circus approximans*
 Brown Goshawk *Accipiter fasciatus*
 Wedge-tailed Eagle *Aquila audax*
 Little Eagle *Hieraetus morphnoides*
 Brown Falcon *Falco berigora*
 Australian Hobby *Falco longipennis*
 Black Falcon *Falco subniger* – March 1967; April 1985
 Peregrine Falcon *Falco peregrinus*

Nankeen Kestrel *Falco cenchroides*
 Australian Spotted Crake *Porzana fluminea*
 Purple Swamphen *Porphyrio porphyrio*
 Dusky Moorhen *Gallinula tenebrosa*
 Black-tailed Native-hen *Gallinula ventralis*
 Eurasian Coot *Fulica atra*
 Painted Button-quail *Turnix varia*
 Red-necked Stint *Calidris ruficollis*
 Sharp-tailed Sandpiper *Calidris acuminata*
 Black-winged Stilt *Himantopus himantopus*
 Black-fronted Dotterel *Elseyornis melanops*
 Red-kneed Dotterel *Erythrogonys cinctus*
 Masked Lapwing *Vanellus miles*
 Silver Gull *Larus novaehollandiae*
 Caspian Tern *Sterna caspia*
 Whiskered Tern *Chlidonias hybridus*
 Rock Dove *Columba livia*
 Spotted Turtle-Dove *Streptopelia chinensis*
 Common Bronzewing *Phaps chalcoptera*
 Brush Bronzewing *Phaps elegans*
 Crested Pigeon *Ocyphaps lophotes*
 Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus*
 Galah *Cacatua roseicapilla*
 Long-billed Corella *Cacatua tenuirostris* – January 1990; February 1991
 Little Corella *Cacatua sanguinea*
 Sulphur-crested Cockatoo *Cacatua galerita*
 Cockatiel *Nymphicus hollandicus*
 Rainbow Lorikeet *Trichoglossus haematodus*
 Musk Lorikeet *Glossopsitta concinna*
 Purple-crowned Lorikeet *Glossopsitta porphyrocephala*
 Elegant Parrot *Neophema elegans*
 Pallid Cuckoo *Cuculus pallidus*
 Fan-tailed Cuckoo *Cacomantis flabelliformis*
 Horsefield's Bronze-Cuckoo *Chrysococcyx basalis*
 Shining Bronze-Cuckoo *Chrysococcyx lucidus*
 Southern Boobook *Ninox novaeseelandiae*
 Spotted Nightjar *Eurostopodus argus* - April 1991
 Laughing Kookaburra *Dacelo novaeguineae*
 Sacred Kingfisher *Todiramphus sanctus* – November 1966
 Rainbow Bee-eater *Merops ornatus*
 White-throated Treecreeper *Cormobates leucophaeus grisescens*
 White-browed Scrubwren *Sericornis frontalis rosinae*
 Southern Whiteface *Aphelocephala leucopsis* – November 1966; February 1967
 Little Wattlebird *Anthochaera chrysoptera*
 Noisy Miner *Manorina melanocephala*

Yellow-plumed Honeyeater *Lichenostomus ornatus*
 Black-chinned Honeyeater *Melithreptus gularis* – November 1966; June 1967 (eight birds)
 Crimson Chat *Epthianura tricolor* - November 1968
 White-fronted Chat *Epthianura albifrons*
 White-browed Babbler *Pomatostomus superciliosus*
 Restless Flycatcher *Myiagra inquieta*
 Magpie-lark *Grallina cyanoleuca*
 Black-faced Cuckoo-shrike *Coracina novaehollandiae melanops*
 Dusky Woodswallow *Artamus cyanopterus*
 Grey Butcherbird *Cracticus torquatus leucopterus*
 Australian Magpie *Gymnorhina tibicen telonocua*
 Australian Raven *Corvus coronoides*
 Little Raven *Corvus mellori*
 Apostlebird *Struthidea cinerea* - 1965; 1966
 Singing Bushlark *Mirafra javanica secunda*
 Fairy Martin *Petrochelidon nigricans neglecta*
 Clamorous Reed-Warbler *Acrocephalus australis*
 Little Grassbird *Megalurus gramineus goulburni*
 Brown Songlark *Cincloramphus cruralis*
 Common Starling *Sturnus vulgaris*

One pair of Apostlebirds built their mud nest in a eucalypt tree near a small creek in the Old Barossa Gold-fields late in 1965. One youngster was raised to maturity and was observed near the nesting area in early 1966. On 30/4/1967, three birds were again observed 1.6 km east of Sandy Creek.

Note: Dates define unusual sightings

Table 4
Recovery of dispersal away from banding sites

Australian Wood duck *Chenonetta jubata*

100-52211 First year female banded 3.5km S. Sandy Creek on 14-04-84. Flew into the side of a newly erected galvanised iron hay-shed and was killed on 01-01-85, 8 months 17 days, 6.4km SE Gawler.

Red Wattlebird *Anthochaera carunculata woodwardi*

071-10020 First year bird banded at Sandy Creek Conservation Park on 03-11-92. Found dead on 22-12-2000, 8 years 1 month 19 days, 2km W.

Yellow-faced Honeyeater *Lichenostomus chrysops samueli*

022-81369 First year or older banded by B. Foreman 1km NW of Bridgewater, S.A. on 13-10-83. Recaptured in the Old Barossa Gold-fields on 19-7-86, 2 years 9 months 6 days, 41km N.

022-88930 Banded by T. Bradley at Hale Conservation Park, S.A. on 28-01-85. Recaptured in the Old Barossa Gold-fields on 27-7-85, 5 months 30 days and 31-8-85, the last being 31-05-86, 1 year 4 months 3 days, 13km WNW.

022-03508 Banded by T. Bradley at Hale Conservation Park, S.A. on 16-06-85. Recaptured in the Old Barossa Gold-fields on 03-08-85, 1 month 19 days, 13km WNW.

023-38528 Banded by T. Bradley at Hale Conservation Park, S.A. on 20-11-85. Recaptured in the Old Barossa Gold-fields on 19-07-86, 7 months 29 days 13km WNW.

023-52116 First year bird banded at Old Barossa Gold-fields on 28-06-86. Recaptured by C. Rich at Pittenween Eagle on the Hill, S.A. on 05-04-87, 9 months 7 days, 39km S.

023-52181 Adult banded at Old Barossa Gold-fields on 28-06-86. Recaptured by R.G. Sinclair 1.2km east of Basket Range, S.A. on 16-12-87, 1 year 5 months 18 days, 35km S.

White-plumed Honeyeater *Lichenostomus penicillatus*

021-91760 Adult banded at Sandy Creek Conservation Park on 08-08-70. Killed by a cat at Elizabeth Vale, S.A. on 06-06-71, 9 months 29 days, 23km SW.

022-90417 Adult banded at Sandy Creek Conservation Park on 30-06-84. Found dead at Smithfield Primary School, S.A. on 29-08-85, 1 year 1 month 29 days, 18km SW.

022-90523 Adult banded at Sandy Creek Conservation Park on 20-04-85. Found dead, on 21-05-91, 6 years 1 month 1 day, 4km S.

White-naped Honeyeater *Melithreptus lunatus*

021-87298 Adult banded at Old Barossa Gold-fields on 26-04-81. Recaptured by T. Bradley at Cromer Conservation Park, S.A. on 11-03-82, 10 months 15 days, 21km E.

Crescent Honeyeater *Phylidonyris pyrrhoptera halmaturina*

023-27932 Adult male banded at Old Barossa Gold-fields on 27-07-85. Recaptured by D. Paton at Bundy Forest Reserve, S.A. on 26-10-85, 3 months 1 day, 16.5km SE.

023-36974 Juvenile male banded by D. Paton at Bundy Forest Reserve, S.A. on 17-01-86. Recaptured in the Old Barossa Gold-fields on 25-05-86, 4 months 8 days, 16.5km NW.

024-05636 First year male banded by D.J. Williams at Bundy Forest Reserve, S.A. on 27-11-90. Recaptured in the Old Barossa Gold-fields on 12-06-91, 6 months 16 days, 16.5km NW.

New Holland Honeyeater *Phylidonyris novaehollandiae*

031-63646 Banded by N. Forde at Para Wirra, S.A. on 28-04-83. Recaptured in the Old Barossa Gold-fields on 26-10-85, 2 years 5 months 28 days, 4km N.

031-73024 First year bird banded at Sandy Creek Conservation Park on 25-11-84. Recaptured by D. Paton at Cromer Conservation Park, S.A. on 01-02-86, 1 year 2 months 6 days, 22km SE.

032-58526 First year bird banded at Sandy Creek Conservation Park on 13-04-85. Found dead at Seacombe Gardens, S.A. on 19-10-86, 6 months 6 days, 56.1km SSW.

032-82556 First year bird banded at Sandy Creek Conservation Park on 16-11-85. Found dead at Cockatoo Valley, S.A. on 31-12-89, 4 years 1 month 15 days, 5km S.

032-68124 Adult banded at Old Barossa Gold-fields on 25-05-86. Killed by a cat at Tea Tree Gully, S.A. on 22-11-86, 5 months 28 days, 20.6km S.

032-68114 Adult banded at Old Barossa Gold-fields on 14-06-86. Recaptured by D. Paton at Hale Conservation Park, S.A. on 22-09-86, 3 months 8 days, 13km WNW.

032-68137 First year bird banded at Old Barossa Gold-fields on 25-05-86. Recaptured by D. Paton at Hale Conservation Park, S.A. on 15-11-86, 5 months 21 days, 13km WNW.

Eastern Spinebill *Acanthorhynchus tenuirostris halmaturinus*

014-99792 Juvenile banded by T. Bradley at Cromer Conservation Park, S.A. on 02-02-86. Recaptured in the Old Barossa Gold-fields on 21-06-86, 4 months 19 days, 21km W.

012-76164 Juvenile banded at Old Barossa Gold-fields on 05-08-79. Recaptured at Sandy Creek Conservation Park on 31-08-82, adult male, 3 years 26 days.

012-30346 Adult male banded at Sandy Creek Conservation Park on 21-05-72.
Recaptured by B.C. Gepp at Kuitpo Forest Reserve, S.A. on 25-06-78, 6 years 1 month 4 days, 80km S.

Silvereye *Zosterops lateralis pinarochrous*

015-00306 Adult banded by D. Paton at Bundy Forest Reserve, S.A. on 04-01-86.
Recaptured in the Old Barossa Gold-fields on 14-06-86, 5 months 10 days, 16.5km NW.

Unless otherwise indicated, functions relating to the banding of birds, replacement of bands and recapture of birds were all carried out by the author.

Table 5
Recovery and longevity details of some species banded in
Sandy Creek Conservation Park (SC) and
Old Barossa Gold-fields (BG) from 1966 to 1993

These records include the longest-lived individuals of a selection of species recovered in Sandy Creek Conservation Park (SC) and Old Barossa Gold-fields (BG)

Peaceful Dove *Geopelia striata*

- 060-91203 11-02-73 Free-flying adult (SC).
20-03-77 Recaptured at banding site 4 years 1 month 9 days.
- 050-74373 17-05-81 Free-flying adult (SC).
24-03-84 Recaptured at banding site 2 years 10 months 7 days.
- 060-83480 17-05-81 Free-flying adult (SC).
24-03-84 Recaptured at banding site 2 years 10 months 7 days.
- 060-91301 16-12-79 Free-flying adult (SC).
31-07-82 Recaptured at banding site 2 years 7 months 15 days.

Total of 251 banded: 243 (SC) and 8 (BG).

Total of 179 recaptured: 179 (SC). 9 were 2 years or longer.

Superb Fairy-wren *Malurus cyaneus leggei*

- 013-66308 04-05-80 Free-flying juvenile (BG).
08-08-87 Recaptured adult female at banding site 7 years 3 months 4 days.
- 012-30495 11-07-76 Free-flying adult female (BG).
26-04-80 Recaptured at banding site 3 years 9 months 15 days.
- 013-66352 02-05-81 Free-flying adult male (SC).
13-10-84 Recaptured at banding site 3 years 5 months 11 days.
- 012-30328 11-03-72 Free-flying first year male (SC).
02-11-74 Recaptured at banding site 2 years 7 months 22 days.
- 012-30227 29-02-70 Free-flying adult male (SC).
11-03-72 Recaptured at banding site 2 years 12 days.

Total of 138 banded: 79 (SC) and 59 (BG).

Total of 82 recaptured: 51 (SC) and 31 (BG). 9 were 2 years or longer, 5 (SC) and 4 (BG).

Striated Pardalote *Pardalotus striatus substriatus*

012-38318 08-12-84 Free-flying adult (SC).
07-12-85 Recaptured at banding site 11 months 30 days.

Brown Thornbill *Acanthiza pusilla*

012-76008 03-06-79 Free-flying adult (BG).
08-08-87 Recaptured at banding site 8 years 2 months 5 days.

Buff-rumped Thornbill *Acanthiza reguloides australis*

012-30567 03-06-79 Free-flying adult (BG).
02-08-86 Recaptured at banding site 7 years 1 month 29 days.

014-90442 28-04-79 Free-flying adult (BG).
10-05-86 Recaptured at banding site 7 years 12 days.

012-30552 28-04-79 Free-flying adult (BG).
26-04-86 Recaptured at banding site 6 years 11 months 28 days.

013-66456 24-07-83 Free-flying adult (BG).
26-06-89 Recaptured at banding site 5 years 11 months 2 days.

012-30446 16-06-75 Free-flying adult (BG).
29-07-79 Recaptured at banding site 4 years 1 month 13 days.

012-02015 18-02-67 Free-flying adult (SC).
01-03-69 Recaptured at banding site 2 years and 13 days.

015-17893 26-06-89 Free-flying adult (BG).
15-04-91 Recaptured at banding site 1 year 9 months 19 days.

012-30447 16-06-75 Free-flying adult (BG).
10-10-76 Recaptured at banding site 1 year 3 months 24 days.

Total of 117 banded: 61 (SC) and 56 (BG).

Total of 50 recaptured: 8 (SC) and 42 (BG). 5 were 2 years or longer, 5 (BG).

Yellow-rumped Thornbill *Acanthiza chrysorrhoa leighi*

012-21005 03-11-68 Free-flying adult (SC).
27-08-72 Recaptured at banding site 3 years 9 months 24 days.

012-21235 01-09-84 Free-flying adult (BG).
12-07-86 Recaptured at banding site 1 year 10 months 11 days.

Yellow Thornbill *Acanthiza nana modesta*

- 012-76161 05-08-79 Free-flying adult (BG).
15-06-85 Recaptured at banding site 5 years 10 months 10 days.
- 012-30488 11-07-76 Free-flying adult (BG).
17-04-82 Recaptured at banding site 5 years 9 months 6 days.
- 012-30467 16-06-75 Free-flying adult (BG).
26-10-80 Recaptured at banding site 5 years 4 months 10 days.
- 012-30594 03-06-79 Free-flying adult (BG).
02-06-84 Recaptured at banding site 4 years 11 months 29 days.
- 012-30600 03-06-79 Free-flying adult (BG).
20-05-84 Recaptured at banding site 4 years 11 months 17 days.
- 012-76183 26-04-80 Free-flying adult (BG).
02-06-84 Recaptured at banding site 4 years 1 month 6 days.
- 013-66382 17-04-82 Free-flying adult (BG).
08-06-85 Recaptured at banding site 3 years 1 month 21 days.
- 013-66461 24-07-83 Free-flying adult (BG).
28-06-86 Recaptured at banding site 2 years 11 months 4 days.

Total of 83 banded: 31 (SC) and 52 (BG).

Total of 41 recaptured: 8 (SC) and 33 (BG). 9 were 2 years or longer, 9 (BG).

Striated Thornbill *Acanthiza lineata clelandi*

- 013-66317 26-10-80 Free-flying adult (BG).
31-08-85 Recaptured at banding site 4 years 10 months 5 days.
- 013-66318 26-10-80 Free-flying adult (BG).
17-06-84 Recaptured at banding site 3 years 7 months 22 days.
- 014-61026 20-05-84 Free-flying adult (BG).
08-08-87 Recaptured at banding site 3 years 2 months 19 days.
- 014-61094 02-06-84 Free-flying adult (BG).
08-08-87 Recaptured at banding site 3 years 2 months 6 days.

Red Wattlebird *Anthochaera carunculata woodwardi*

- 070-93901 11-04-66 Free-flying adult (SC).
03-10-69 Recaptured at banding site 3 years 5 months 23 days.

070-93924 17-06-84 Free-flying adult (BG).
27-7-85 Recaptured at banding site 1 year 1 month 10 days.

Little Wattlebird *Anthochaera chrysoptera*

060-91201 27-08-72 Free-flying adult (SC).
16-11-73 Recaptured at banding site 1 year 2 months 20 days.

White-plumed Honeyeater *Lichenostomus penicillatus*

021-72804 28-01-67 Free-flying adult (SC).
16-02-74 Recaptured at banding site 7 years 19 days.

021-72853 19-02-67 Free-flying adult (SC).
29-07-73 Recaptured at banding site 6 years 5 months 10 days.

021-65285 16-04-66 Free-flying adult (SC).
27-08-72 Recaptured at banding site 6 years 4 months 11 days.

021-45407 05-01-69 Free-flying adult (SC).
23-02-74 Recaptured at banding site 5 years 1 month 18 days.

Total of 783 banded: 718 (SC) and 65 (BG).

Total of 245 recaptured: 245 (SC). 50 were 2 years or longer.

Black-chinned Honeyeater *Melithreptus gularis*

031-16654 12-10-70 Free-flying adult (SC).
07-05-72 Recaptured at banding site 1 year 6 months 26 days.

Brown-headed Honeyeater *Melithreptus brevirostris pallidiceps*

021-87194 21-06-79 Free-flying adult (BG).
14-07-84 Recaptured at banding site 5 years 23 days.

021-87235 29-07-79 Free-flying adult (BG).
14-07-84 Recaptured at banding site 4 years 11 months 16 days.

021-87194 21-06-79 Free-flying adult (BG).
02-06-84 Recaptured at banding site 4 years 11 months 11 days.

020-30074 09-11-68 Free-flying adult (SC).
29-07-73 Recaptured at banding site 4 years 8 months 20 days.

Total of 151 banded: 107 (SC) and 44 (BG).

Total of 84 recaptured: 72 (SC) and 12 (BG). 11 were 2 years or longer, 8 (SC) and 3 (BG).

White-naped Honeyeater *Melithreptus lunatus*

023-28172 25-05-86 Free-flying adult (BG).
24-03-89 Recaptured at banding site 2 years 9 months 30 days.

Crescent Honeyeater *Phylidonyris pyrrhoptera halmaturina*

021-87196 21-06-79 Free-flying adult male (BG).
04-05-80, 24-07-83, 15-06-85 and 26-04-86 Recaptured at banding site
19-07-86 Recaptured at banding site 7 years 28 days.

Total of 193 banded: 19 (SC) and 174 (BG).

Total of 45 recaptured: 45 (BG).

New Holland Honeyeater *Phylidonyris novaehollandiae*

031-30414 08-11-69 Free-flying first year bird (SC) banded by I. Grant.
14-04-84 Recaptured (SC) 14 years 5 months 6 days
(band replaced with 031-59724).

031-16875 03-11-73 Free-flying adult (SC).
06-04-85 Recaptured at banding site 11 years 5 months 3 days
(band replaced with 032-07496).

031-30691 16-11-73 Free-flying first year bird (SC).
14-04-84 Recaptured at banding site 10 years 4 months 28 days
(band replaced with 031-59725).

031-27505 03-11-68 Free-flying adult (SC).
21-10-78 Recaptured at banding site 9 years 11 months 18 days.

031-59752 05-05-84 Free-flying first year bird (SC).
03-11-92 Recaptured at banding site 8 years 5 months 29 days
(band replaced with 033-88815).

031-59733 21-04-84 Free-flying adult (SC).
23-04-92 Recaptured at banding site 8 years 2 days
(band replaced with 033-88791)

5 others captured at banding sites over 7 years after banding.

Total of 2471 banded: 2141 (SC) and 330 (BG).

Total of 414 recaptured: 393 (SC) and 21 (BG). 98 were 2 years or longer, 86 (SC)
and 12 (BG).

Eastern Spinebill *Acanthorhynchus tenuirostris halmaturinus*

021-87236 05-08-79 Free-flying adult male (BG).
27-07-85 Recaptured at banding site 5 years 11 months 22 days.

- 012-66311 04-05-80 Free-flying adult female (BG).
08-06-85 Recaptured at banding site 5 years 1 month 4 days.
- 012-02055 23-04-67 Free-flying adult male (SC).
07-02-71 Recaptured at banding site 3 years 9 months 14 days.
- 013-66368 02-05-81 Free-flying adult female (SC).
11-02-84 Recaptured at banding site 2 years 9 months 9 days.

Total of 300 banded: 86 (SC) and 214 (BG).

Total of 84 recaptured: 19 (SC) and 65 (BG). 22 were 2 years or longer, 7 (SC) and 15 (BG).

Scarlet Robin *Petroica boodang*

- 012-30450 16-06-75 Free-flying adult female (BG).
02-06-84 Re-captured at banding site.
03-08-85 Recaptured at banding site 10 years 1 month 17 days.
- 012-76070 21-06-79 Free-flying adult male (BG).
02-06-84 Re-captured at banding site.
03-08-85 Recaptured at banding site 6 years 1 month 12 days.

Red-capped Robin *Petroica goodenovii*

- 014-61005 19-05-84 Free-flying adult female (SC).
07-12-85 Recaptured at banding site 1 year 6 months 19 days.

Hooded Robin *Melanodryas cucullata*

- 021-87106 16-02-74 Free-flying first year male (SC).
30-07-78 Recaptured at banding site 4 years 5 months 12 days.

White-browed Babbler *Pomatostomus superciliosus*

- 050-74361 19-09-70 Free-flying adult (SC).
27-10-73 Recaptured at banding site 3 years 1 month 8 days.
- 050-72703 18-03-66 Free-flying adult (SC).
09-11-68 Recaptured at banding site 2 years 7 months 22 days.
- 050-72712 23-06-66 Free-flying adult (SC).
09-11-68 Recaptured at banding site 2 years 4 months 16 days.
- 050-74337 01-11-69 Free-flying adult (SC).
20-02-72 Recaptured at banding site 2 years 3 months 19 days.

Varied Sittella *Daphoenositta chrysoptera pileata*

- 012-76133 25-06-79 Free-flying adult male (BG).
25-05-86 Recaptured at banding site 6 years 11 months.

- Crested Shrike-tit *Falcunculus frontatus***
031-27765 01-11-69 Free-flying adult male (SC).
07-05-72 Recaptured at banding site 2 years 6 months 7 days.
- Golden Whistler *Pachycephala pectoralis fuliginosa***
031-16832 27-10-73 Free-flying adult female banded by G. Cam (SC).
11-11-84 Recaptured at banding site.
04-12-87 Recaptured (SC) 14 years 1 month 8 days.
- 031-35874 05-08-75 Free-flying first year or older female banded by H.A. Ford (SC).
16-12-84 Recaptured (SC) 9 years 4 months 11 days.
- 031-38288 04-05-80 Free-flying adult male (BG).
27-07-85 Recaptured at banding site 5 years 2 months 23 days.
- 031-27603 05-12-68 Free-flying adult male (SC).
27-10-73 Recaptured at banding site 4 years 10 months 22 days.
- Rufous Whistler *Pachycephala rufiventris***
032-07369 11-11-84 Free-flying adult male (SC).
16-04-92 Recaptured at banding site 7 years 5 months 5 days.
- 031-24235 03-09-66 Free-flying adult female (SC).
07-02-71 Recaptured at banding site 4 years 5 months 4 days.
- Grey Shrike-thrush *Colluricincla harmonica***
050-74528 21-09-85 Free-flying first year (SC).
04-12-87 Recaptured at banding site 2 years 2 months 13 days.
- Willie Wagtail *Rhipidura leucophrys***
021-87300 26-04-81 Free-flying adult (SC).
04-08-84 Recaptured at banding site 3 years 3 months 8 days.
- Red-browed Finch *Neochmia temporalis***
012-76104 25-06-79 Free-flying adult (BG).
20-04-80 Recaptured at banding site 9 months 25 days.
- 012-76123 25-06-79 Free-flying adult (BG).
20-04-80 Recaptured at banding site 9 months 25 days.
- Diamond Firetail *Stagonopleura guttata***
013-66355 02-05-81 Free-flying adult (SC).
05-09-82 Recaptured at banding site 1 year 4 months 2 days.

022-90479 11-11-84 Free-flying adult male (SC).
16-11-85 Recaptured at banding site 1 year 5 days.

Silvereye *Zosterops lateralis pinarochrous*

012-30310 26-02-72 Free-flying adult (SC).
02-05-81 Recaptured at banding site 9 years 2 months 4 days.

014-13237 06-04-85 Free-flying adult (SC).
16-04-92 Recaptured at banding site 7 years 10 days.

012-09393 22-02-69 Free-flying adult (SC).
05-06-75 Recaptured at banding site 6 years 3 months 12 days.

012-76168 16-12-79 Free-flying adult (SC).
20-04-85 Recaptured at banding site 5 years 4 months 4 days.

012-30572 03-06-79 Free-flying adult (BG).
29-09-84 Recaptured at banding site 5 years 3 months 26 days.

Total of 1542 banded: 951 (SC) and 591 (BG).

Total of 350 recaptured: 281 (SC) and 69 (BG). 60 were 2 years or longer, 49 (SC) and 11 (BG).

Common Blackbird *Turdus merula*

060-73506 09-11-66 Free-flying adult female (SC).
15-11-69 Recaptured at banding site 3 years 6 days.

060-83422 23-12-66 Free-flying adult male (SC).
15-11-69 Recaptured at banding site 2 years 10 months 23 days.

060-83475 02-05-81 Free-flying adult male (SC).
29-01-84 Recaptured at banding site 2 years 8 months 27 days.

Unless otherwise indicated, functions relating to the banding of birds, replacement of bands and recapture of birds were all carried out by the author.

Additional information has been included on selected species.

Species for special comments

Diamond Dove

My first sighting of this species in Sandy Creek Conservation Park was in 1969 with further observations in 1971, 1984 and 1985. On 14/04/84, in the northern section of the park, I captured and banded one pair. On 21/04/84, in the same area, a fledgling was captured and banded. My next observation was on 16/02/85, when I captured and banded an adult male. Although these sightings spanned sixteen years, I doubt if they were naturally occurring, being a species of the more arid parts of South Australia.

Little Corella

My first sighting of a flock of this species in the project area was on 09/02/74, about 2 km east of Sandy Creek; the count was 150 birds, all feeding on the ground in an open paddock. In February during the 1980s it was not uncommon to see a flock of 2000 in the area with 30+ Long-billed Corellas.

Spotted Nightjar

On the north-west section of Sandy Creek Conservation Park on rocky terrain, one bird was seen in October 1966 and in the same location, one bird was seen in July and October 1972. One bird was observed in the Old Barossa Gold-fields project area, on the edge of a rocky bush track in April 1991. In all cases the birds were disturbed in daylight when I nearly walked on them.

Owlet Nightjar

One bird was flushed from the hollow of a Pink Gum at Sandy Creek Conservation Park on November 1969 and December 1984. On both occasions the bird returned to the hollow within minutes.

Singing Honeyeater

One bird was captured and banded at Sandy Creek Conservation Park on 30/06/84. This was my only sighting of this species in the project area.

Yellow-plumed Honeyeater

One juvenile captured and banded in Sandy Creek Conservation Park on 16/02/85. I observed only two other birds of this species in the Sandy Creek Conservation Park.

Fuscous Honeyeater

I observed one bird being harassed by New Holland Honeyeaters near water, at the northern end of Sandy Creek Conservation Park on 16/02/85. A vagrant, and possibly the first sighting for the Barossa region.

Black Honeyeater

Three birds were seen in the northern section of Para Wirra Recreation Park on 28/09/85 by National Parks Ranger G. Fitzpatrick (this location was within the project area). On 19/10/85 I observed seven pairs plus three nesting pairs 6-8 km south and south-east of the locality of Sandy Creek. An adult pair was captured and banded and also an adult male on 26/10/85. In the southern section of Sandy Creek Conservation Park on 16/11/85

I observed one adult pair; these birds remained in the area until 14/12/85 and were possibly nesting as the female was missing most of the time.

Crimson Chat

Several pairs were observed in the northern section of Sandy Creek Conservation Park on 09/11/68; two pairs had young in the nests. One adult male and two fledglings were banded. On returning to the area on 17/11/68 three more fledglings were banded. As a number of Orange Chats had arrived in the same location, with two pairs nesting with eggs, I decided just to observe without banding. By the middle of December 1968, both species had left the area. Reports at the time indicated that there was an irruption of Crimson Chats to the southern parts of South Australia.

Rose Robin

I observed an adult pair north-west of Williamstown on 12/04/74 in the garden of a farmhouse. I returned to the location on 15/04/74, captured and banded the male, photographed and released the bird on site. I was told by the property owner that the farm cat had caught the female earlier that morning.

White-browed Woodswallow

Two observations in Sandy Creek Conservation Park of several pairs in February 1968 and November 1985. In the Old Barossa Gold-fields 8 km SSE of Sandy Creek Conservation Park on 19/10/85 more than 400 birds were observed feeding amongst high and low vegetation. A week later the birds had dispersed throughout the area and were in various stages of nesting.

White-winged Chough

On some banding mornings I would drive the inside perimeter of the park. If fences were damaged or trees had fallen across the track, I would notify the National Park rangers. Driving on 16/04/92 I noticed the White-winged Choughs were on the move. 26 birds were moving and feeding in one group at the northern end of Sandy Creek Conservation Park. The same morning 11 birds were in a separate group in the south-eastern section of the park. A third group of eight was observed in the south-western section. The first group was sighted at 07.45 hours, the second at 07.50 hours and the third group at 08.00 hours. This is the largest number of this species I have observed in Sandy Creek Conservation Park during the 27 year span of the project or {in 2004} in the 11 years since the completion of the project.

Species observed breeding for the first time in Sandy Creek Conservation Park from 1966 to 1993

Not only was the aim to find for the first time what species were breeding in Sandy Creek Conservation Park, but the time of year of each. Observations would only be noted if the species had eggs, young in nest or very recent fledglings.

Several nests were difficult to assess because of their location. I would then rely on the species behaviour, eg taking food to the nest, returning to the nest within a few minutes or displaying some form of agitation. I must mention that I did not feel positive at all times with this type of judgement, and when that occurred, no breeding was recorded, but further checks were made on other days. Although many of the species observed nested in other years after the first sighting, those were not documented.

This exercise was carried out on occasions after banding was completed for the day. On most instances the nests were in close proximity of the banding areas and were noticed during the day.

Species are listed in checklist order.

- 14/12/85 Stubble Quail: A shallow hollow in the ground lined with dry grasses near the base of a grape-vine *Vitis vinifera*.
- 15/09/84 Black-shouldered Kite: In a disused *Corvus spp* nest about ten or eleven metres above the ground in a River Red Gum *Eucalyptus camaldulensis camaldulensis*.
- 30/10/76 Whistling Kite: A bulky structure of sticks high in a South Australian Blue Gum *Eucalyptus leucoxylon leucoxylon*.
- 11/10/81 Brown Goshawk: A small structure of sticks on top of *mistletoe spp* in a Pink Gum *Eucalyptus fasciculosa*.
- 05/09/82 Nankeen Kestrel: In a hollow between the roof and brick wall in an old hut (now ruins).
- 05/09/82 Spotted Turtle-Dove: A frail structure of dry twigs on a horizontal branch in thick foliage of a Silver Banksia *Banksia marginata*.
- 12/11/66 Common Bronzewing: A saucer-shaped structure of dry sticks on a narrow fork in a Drooping Sheoak *Allocasuarina verticillata*.
- 09/11/69 Crested Pigeon: A saucer-shaped structure of dry sticks on a narrow fork in a Southern Cypress Pine *Callitris preissii*.

- 21/04/84 Diamond Dove: A small platform of thin dry sticks placed on a narrow fork in a Silver Banksia *B. marginata*.
- 30/11/68 Peaceful Dove: A small platform of thin dry sticks placed on a narrow fork in a Silver Banksia *B. marginata*.
- 13/10/73 Galah: In a near vertical hollow in the trunk of a River Red Gum *E. c. camaldulensis*.
- 18/10/69 Musk Lorikeet: A hollow in a South Australian Blue Gum *E. l. leucoxylon* about twenty metres above the ground.
- 23/10/66 Purple-crowned Lorikeet: A small hollow in a horizontal broken branch in a South Australian Blue Gum *E. l. leucoxylon*.
- 08/10/66 Crimson Rosella (Adelaide): A hollow in a limb of a River Red Gum *E. c. camaldulensis*.
- 08/10/66 Red-rumped Parrot: A hollow in a limb of a Pink Gum *E. fasciculosa*.
- 13/10/73 Black-eared Cuckoo: Nest of a Brown Thornbill was chosen; nest was oval shaped but larger than normal with entrance hole in the top, constructed of coarse dry grasses, strips of bark and spider's web, situated in a Common Fringe Myrtle *Calytrix tetragona*.
- 21/09/85 Tawny Frogmouth: A shallow saucer-shaped structure criss-crossed with dry sticks on a horizontal branch with fork, in a Silver Banksia *B. marginata*, at about three metres.
- 23/10/66 Sacred Kingfisher: A neat tunnel was made in the rotting end of a large fallen horizontal limb of a Southern Cypress Pine *C. preissii*.
- 23/10/66 Rainbow Bee-eater: A neat hole in a sloping sandy mound near an old fallen Southern Cypress Pine *C. preissii*.
- 13/10/73 Superb Fairy-wren: A dome-shaped bulky structure with a side entrance, constructed of dry grasses, bark fibres and bound with cobwebs. Found in a Kangaroo Thorn *Acacia paradoxa*.
- 16/11/85 Spotted Pardalote: An entrance hole in a sandy sloping mound under the shade of a large Pink Gum *E. fasciculosa*.
- 13/10/73 Striated Pardalote: A hollow in a knot-hole of a branch of a large Pink Gum *E. fasciculosa*, about five metres from the ground.

- 13/10/73 Brown Thornbill: The only nest found that was with the Black-eared Cuckoo. Refer to Black-eared Cuckoo (previous page).
- 24/08/73 Yellow Thornbill: An oval structure with a small side entrance, constructed with dried and some green grasses, bark fibres, grey-green moss and spider egg-sacs, attached to inner green foliage of a Southern Cypress Pine *C. preissii*.
- 11/07/76 Striated Thornbill: A pear-shaped nest with entrance hole near the top of one side. The structure being dried grasses, bark fibres and spider webs, suspended in the foliage of a Peppermint Box *Eucalyptus odorata*.
- 03/09/67 Southern Whiteface: In a hollow in the top of a fence post. Nest material was grasses and bark, with an opening at the top showing wool and feathers inside.
- 23/10/66 Red Wattlebird: Inside, the nest was cup-shaped, lined with fine grasses and wool, the outside structure was rough with thin dry sticks. It was attached to thickish twigs in a large Silver Banksia *B. marginata*.
- 27/08/72 Little Wattlebird: Similar to the Red Wattlebird, only the nest was neater on the outside and in size a little smaller. A horizontal fork branch in a Silver Banksia *B. marginata* held the nest.
- 08/08/70 Yellow-faced Honeyeater: A neat cup-shaped structure of shredded bark and grasses, bound together with cobwebs. The lining consisted of wool and some plant down. The nest was placed near the outer edge of a Common Fringe Myrtle *C. tetragona*.
- 25/06/66 White-plumed Honeyeater: Dry grasses, small strips of bark, plant down and cobwebs were the materials in this small cup-shaped nest built in a Flame Heath *Astroloma conostephioides*.
- 18/10/69 Brown-headed Honeyeater: I have no description of this nest as it was built in the upper foliage of a tall Pink Gum *E. fasciculosa*. The tree was in the location where I was banding, and noticed the species flying to and from the same patch of foliage throughout the day.
- 11/07/75 Crescent Honeyeater: The nest was cup-shaped and strong, built with grasses, strips of bark and wool, low down in the foliage of Yacca *Xanthorrhoea semiplana semiplana*. This species has been the dominant shrub selected, and is even more prevalent in the Old Barossa Gold-fields.

- 03/09/66 New Holland Honeyeater: Similar cup-shaped nest and material as the Crescent Honeyeater, I found their nest site preference to be in a Flame Heath *A. conostephioides*.
- 28/08/76 Eastern Spinebill: A strong cup-shaped nest of dry grasses, bark and hair, lined with feathers and well attached to an upright fork in a Beaked Hakea *Hakea hakea rostrata* in a dense area of scrub. (A lovely nest.)
- 09/11/68 Crimson Chat: A neat cup-shaped structure of dried grasses, fine twigs and cow or horse hair, placed near the base of a clump of thick green grass.
- 17/11/68 Orange Chat: A neat cup-shaped structure of dried grasses, fine twigs and cow or horse hair, placed near the base of a clump of thick green grass.
- 10/09/66 White-fronted Chat: A cup-shaped structure neatly made with grasses and small twigs. Plant-down and hair was used for the lining. The nest was placed off the ground in a grass tussock.
- 31/07/82 Jacky Winter: A small shallow cup structure of dry grasses and spider's web, the outside camouflaged with bark and lichen, placed near the trunk on a horizontal branch of a Pink Gum *E. fasciculosa*. Very hard to detect unless a bird flew off or to the nest.
- 08/08/87 Scarlet Robin: Small strips of bark, dry grasses, moss and spider's web seemed to form the structure of this small cup-shaped nest. Placed in a crevice in the trunk of a Southern Cypress Pine *C. preissii* where a large branch had broken off.
- 03/09/67 Red-capped Robin: A very neat, small rounded cup-shaped nest, fine shredded bark and grasses, strongly bound with spider's web, placed on a horizontal branch of a Wallowa *Acacia calamifolia*.
- 03/09/66 Hooded Robin: A cup-shape with strips of bark and grasses bound together with spider's web on a horizontal branch of a part dead large Silver Banksia *B. marginata*.
- 29/07/73 White-browed Babbler: A large domed stick-nest with a spout-like entrance built in the branches of a Silver Banksia *B. marginata* at about three metres.
- 23/10/66 Varied Sittella: This nest was quite hard to see; it was built in-between a fork on a dead branch of a Silver Banksia *B. marginata* and was well camouflaged from below. It appeared to be all bark and was about seven metres from the ground.

- 23/10/73 Golden Whistler: A shallow open cup nest, built with bark, twigs and rootlets, bound together with spider's web, placed in an upright fork of a Quandong *Santalum acuminatum*.
- 18/10/69 Rufous Whistler: Similar to the Golden Whistler but not built as strong, placed in a Peppermint Box *E. odorata*.
- 12/11/66 Grey Shrike-thrush: Large bowl-shaped nest with bark, grass, rootlets and dried leaves, built in a dense section of Scarlet Bottlebrush *Callistemon r. rugulosus* and covered with Bridal Creeper *Myrsiphyllum asparagoides*.
- 08/10/66 Magpie-lark: Bowl-shaped nest, built with mud and dry grasses, firmly attached to a horizontal branch of a Southern Cypress Pine *C. preissii*, about five metres above the ground. This nest was not used for nesting until six weeks after completion.
- 21/05/72 Grey Fantail: Nest shaped like a delicate wine-glass or goblet, beautifully built with fine grasses, thin strips of bark, plant fibres and bound with spider's web, placed on a slender limb in a Pink Gum *E. fasciculosa*, about three metres above the ground.
- 03/09/66 Willie Wagtail: Cup-shaped, made of fine grasses, shreds of bark and rootlets, bound with what seemed like layers of spider's web. It was built on a small horizontal branch of a Golden Wattle *Acacia pycnantha* at about three metres above the ground.
- 13/10/84 Black-faced Cuckoo-shrike: A saucer-shaped nest made of bark, thin twigs, dry grasses and matted together with spider's web and placed on a horizontal fork of a Pink Gum *E. fasciculosa*, about seven metres from the ground.
- 12/11/66 White-winged Triller: A small cup-shaped structure of plant material, small strips of bark covered with spider's web, placed on a horizontal fork of a very old large Silver Banksia *B. marginata*.
- 15/09/84 Dusky Woodswallow: A saucer-shaped nest of twigs and what appeared to be small rootlets, placed in a shallow hollow of a large fallen branch of a Southern Cypress Pine *C. preissii*.
- 08/10/66 Australian Magpie (white backed): A large bowl-shaped structure of sticks and twigs, placed in the fork of a South Australian Blue Gum *E. l. leucoxydon*.
- 23/10/66 Grey Currawong: A bowl-shaped structure of twigs built among the upper foliage of a Southern Cypress Pine *C. preissii*, about fifteen metres above the ground among tall eucalypt species.

- 23/10/66 Australian Raven: Nest constructed of dry sticks, well made and placed high in a South Australian Blue Gum *E. l. leucoxyton*.
- 03/09/67 White-winged Chough: A large bowl-shaped structure of mud, built on a horizontal branch of a Peppermint Box *E. odorata*, about eight metres from the ground.
- 03/09/66 Zebra Finch: A small dome-shaped nest with a funnel entrance on one side, made from dry pieces of stiff dry grass, built in a Kangaroo Thorn *A. paradoxa*.
- 03/10/69 Diamond Firetail: A bulky spherical nest with a long entrance tunnel, constructed of long green stems of grass and small twigs, built in the thick foliage branches of a Silver Banksia *B. marginata*.
- 09/11/69 European Greenfinch: An untidy open loose nest of twigs, plant fibres, wool and moss, built in a Southern Cypress Pine *C. preissii*.
- 01/07/69 European Goldfinch: A compact nest built of dry grasses, lichens, moss and feathers, on an inner branch of a grape-vine *V. vinifera*.
- 20/10/68 Mistletoebird: The construction of this species nest is unique, being pear-shaped and built with spider's web, fluffy seeds, plant down, wool and lichens, with a small entrance on one side. This was placed on a twig under thick foliage in a Pink Gum *E. fasciculosa*.
- 11/07/75 Welcome Swallow: Nest was the shape of a half-bowl, built with small pellets of mud. Feathers and fine grass could be seen showing over the inner edge of the nest. Site chosen was on an upper ledge inside an old brick ruin.
- 03/09/67 Tree Martin: Two birds were observed going to and from a hollow spout in a horizontal branch of a River Red Gum *E. c. camaldulensis*. It did appear that they were taking food into the hollow.
- 09/11/68 Rufous Songlark: A bird was disturbed from a nest on the ground in a vineyard (a section of Sandy Creek Conservation Park, vines now removed). The nest was cup-shaped, constructed of grasses with fine dry grass as the lining. After a short time the bird returned to its three eggs.
- 03/11/68 Silvereeye: A woven cup-shaped nest, constructed of fine grasses, rootlets, wool and spider's web. The nest was suspended among the stalks of Boneseed *Chrysanthemoides monilifera*, about one and half metres above the ground.

- 29/11/69 Common Blackbird: A bulky bowl-shaped nest of grass, bark, leaves and rootlets mixed with mud, this was mainly at the base. It was built in a bushy section of Scarlet Bottlebrush *C. r. rugulosus*.
- 03/09/66 Common Starling: Built in a hollow of a River Red Gum *E. c. camaldulensis*, about six metres from the ground.

Decline and increase of some species in Sandy Creek Conservation Park

Since the completion of the 1966–1993 bird banding and observation report, I have continued observing birds in Sandy Creek Conservation Park. Given the decline of many species in the Mount Lofty Ranges, I have included my observations regarding declines and the increase of some species in Sandy Creek Conservation Park.

During the course of this period I noticed a significant decline of some species. There are three species which I have not sighted since 1972 and one other species I have seen only once since 1972. This sighting was on 21/4/1999. All birds listed below were observed regularly from 1966 until the mentioned year, after that their numbers declined from between 50 percent to 100 percent by December 2003.

I have not included species that are irregular to the area or uncommon or rare visitors.

The following lists note my observations of the beginning of significant declines of some species as well as a gradual increase in sightings of others:

Birds in decline	since	Birds sighted more frequently	since
Brown Treecreeper	1980	Little Corella	1985
Chestnut-rumped Thornbill	1972 (21/04/99)	Rainbow Lorikeet	1985
Southern Whiteface	1972	Musk Lorikeet	1976
Black-chinned Honeyeater	1986	Shining bronze-Cuckoo	1985
Tawny-crowned Honeyeater	1985	White-fronted Honeyeater	1975
White-fronted Chat	1972	Rufous Whistler	1988
Jacky Winter	1983	Diamond Firetail	1982
Scarlet Robin	1990		
Varied Sittella	1986		
Crested Shrike-tit	1986		
Golden Whistler	1989		
Restless Flycatcher	1982		
Richard's Pipit	1985		
Zebra Finch	1972		
European Greenfinch	1985		
European Goldfinch	1985		
Rufous Songlark	1985		

Most of the species on the Decline list are comparable with present observations of species decreasing throughout the Mount Lofty Ranges. It seems reasonable, then, that my observations have indicated those same species have also been affected in the areas of Sandy Creek Conservation Park and the Old Barossa Gold-fields.

The Southern Whiteface, White-fronted Chat and Chestnut-rumped Thornbill, have, with one exception, not been seen in the Sandy Creek Conservation Park since 1972. They were

already very low in numbers in 1966; adverse and declining environmental conditions seem to have taken a toll on their existence. My assessment for the decline of the Chestnut-rumped Thornbill and the Southern Whiteface in Sandy Creek Conservation Park is that it seems that by 1966 both species were in an isolated situation. The numbers at that time were low and the Southern Whiteface (seven birds) seemed to be restricted to the north and north-western section of the park. Habitat formation was open scrub on flat and stony slopes, to open grassy areas and grapevines (introduced, now cleared) on sandy soil. Adjacent to the northern area of the park are farming properties and to the west and north-east is sand mining. From my observation over the seven-year period of their stay, only one ventured to a banding site (site 4: North Park). Maybe they did travel through that area when I was not there. The Chestnut-rumped Thornbill (five birds) were frequent in the same location, but did venture into the eastern area of the park. During their seven-year stay six were banded at the same banding site (site 4: North Park): 1/1967; 3/1968; 1/1969; 1/1972, with an observation of one bird in the southern section of the park in 4/1999.

The Zebra Finch is another species that I have not observed since 1972. Their habitat has been affected by the increased and extensive sand mining operation in close proximity to Sandy Creek Conservation Park. Breeding and roosting locations of the Zebra Finch were in the area now mined, and unfortunately the birds did not adapt to other habitats near by. Sand mining could also have affected the water drainage through the Conservation Park creating continuing problems for the flora and fauna.

From my observations within the project area, the Brown Treecreeper and Restless Flycatcher, frequent in the area around 1966, are now rare visitors. Brown Treecreepers were not uncommon in Sandy Creek Conservation Park from 1966 to 1972. Most of my observations were in the southern and western sections of the park. From 1973 to 1980 their numbers could be classed as uncommon, and since then they have been rarely sighted. There is one location in the project area where birds are still observed moving around the trunks of River Red Gums: (site 1: Para Crossing).

Black-chinned Honeyeaters were probably in larger numbers in Sandy Creek Conservation Park than has been recorded. There may be a fragmented population that extends to the North Para River, Altona Scrub near Lyndoch in the Barossa Valley and into Sandy Creek Conservation Park.

Reduced numbers of Richard's Pipit and Rufous Songlark are consistent with other declines, including other grassland visitors such as the Singing Bushlark, Eurasian Skylark and Brown Songlark. The changes in agricultural and horticultural methods, and the use of chemical pesticides and some fertilizers, may have played a role in reducing the food source for those birds during the past years.

Drought conditions throughout the years have not allowed re-growth of many understorey plants. Areas that once provided insect life for Scarlet Robins and Jacky Winters are now bare.

The change in status of the Golden Whistler, European Greenfinch and European Goldfinch from frequent, less frequent and now uncommon, seems to indicate an altered habitat, therefore the loss of vital food supply. The Tawny-crowned Honeyeater, Varied Sittella and Crested Shrike-tit have been similarly affected.

Results

Although banding was limited at site 1 (Para Crossing) the location continued to be monitored with results showing that the following species were more attracted to that location than any other region in the project area: Red-rumped Parrot, Sacred Kingfisher, Brown Treecreeper, Noisy Miner, Hooded Robin, Dusky Woodswallow, Welcome Swallow and Tree Martin. This site could have provided interesting species details, the problem was people movement resulting in two nets trashed and tossed into bushes even though each net was tagged BIRD BANDING, either CSIRO or Australian National Parks.

I experienced the same type of occurrence at South West Park (site 7) with one net, but continued at that site as very few people were noticed in that location.

Bird banding at times can produce the unexpected; at the Para Crossing (site 1) Black Honeyeaters and White-browed Woodswallows were found and neither were captured at any other site with both species being rare visitors to the total area under study. (See Species for Special Comments)

The wood-land/open shrubland site (site 5: Ruins) produced more Red-capped Robins than any other in the project area. Banding results show they were captured throughout the four seasons of the year (Table 1), with summer and autumn months being the more productive.

In the banksia area site (site 6: South Park) two species were dominant; the New Holland Honeyeater throughout this location, and Silveryeyes which were more prevalent in the eastern section (Table 1).

Other species that frequented the same area but in reduced numbers were Peaceful Dove, Crimson Rosella (Adelaide), Elegant Parrot (more regular in recent times), Red Wattlebird, Little Wattlebird, Brown-headed Honeyeater, Rufous Whistler, Diamond Firetail and European Greenfinch.

Species that often occupied the edge of the banksia/open-woodland formation were Peaceful Dove, Rainbow Bee-eater, Superb Fairy-wren, Buff-rumped Thornbill, Yellow-rumped Thornbill, Scarlet Robin and Hooded Robin.

Prior to this project I would have assumed that birds in general would move in both directions between Sandy Creek Conservation Park and the Old Barossa Gold-fields owing to the close distance between them. The findings in this report do not suggest that they do, making both areas vital habitats for the bird species that use them.

A long-term project enables the gathering of continuous data, and looking back at the project I would change very little in the way of strategies. Perhaps more banding days could be considered.

Discussion

Owing to the problem of decline of our native birds in the Mount Lofty Ranges I feel it necessary to present my view on the subject in this chapter.

In time, with shared knowledge, careful environmental management and political will it may be possible to reverse the list of declining birds of the Mount Lofty Ranges.

Banding results show that there is a corridor from Hale and Cromer Conservation Parks and Bundy Forest Reserve to the Old Barossa Gold-fields and return (table 4). The surprise for me was that of 9291 birds banded, only one bird (an Eastern Spinebill) banded in the Barossa Gold-fields was recaptured at Sandy Creek Conservation Park (table 4). No birds were recaptured from the Conservation Park to the Old Barossa Gold-fields, although it is a direct distance of only 6 km SW (figure 1) and the vegetation between the Gold-fields and Sandy Creek Conservation Park is mainly savannah woodland.

Habitat clearance

I can remember in the late 1940s early 1950s in parts around Cockatoo Valley area (between Sandy Creek Conservation Park and the Old Barossa Gold-fields) there was dense scrubland and few houses. Since those days there has been clearing of scrubland, a large bush-fire (January 1971) and the clearance of land for many homes, which now dot the landscape, both on flat land and throughout the hilly Gold-fields.

It could be this lack of continuous understorey, replaced by vegetation that is not suitable as a food source for native birds between both areas, resulting in virtually no movement of birds between the Old Barossa Gold-fields and Sandy Creek Conservation Park.

Continuing habitat clearance in the Mount Lofty Ranges is likely to affect some species and subspecies which are already in decline. This may lead to further fragmentation of suitable habitat, which will have an adverse influence on the gene-flow within populations. This may now be happening with the Black-chinned Honeyeater, Brown Tree-creeper and Restless Flycatcher.

Weeding

In a bid to repair the damage caused by habitat clearance a number of programs exist which are manned by dedicated volunteers. The Friends of Sandy Creek Conservation Park is one such group. Their dedicated, tireless work has controlled the spread of Boneseed *Chrysanthemoides monilifera* throughout the park. Controlling the spread of this weed will help the understorey to recover, thereby strengthening the ecosystem and assisting the revegetation of native plants.

Burning

Discussions were had with National Parks personnel about controlled burning in sections of Sandy Creek Conservation Park, particularly the Scarlet Bottlebrush and Silver Banksia

areas, as the burden of dead wood within these plants restricted the survival of new growth.

During 1993 two small controlled fires by National Parks Rangers were carried out in two adjoining sections of Scarlet Bottlebrush. First was a cold fire (conditions of low temperature) that had partial success with new growth, the second was a hot fire (possessing great heat) that produced strong new growth and foliage and destroyed the Boneseed (an exotic Daisy).

Exclosures

Sections of the Silver Banksia have been fenced to prevent kangaroos from feeding on any new growth. Others have been fenced to keep both kangaroos and rabbits out. Without a fire in this area only time will tell if this project is a success as the Silver Banksia is very old and dying. Both of these plant species are vital to Sandy Creek Conservation Park, not only for their own survival but to continue to produce food for insects and birds.

Re-vegetation

Although re-vegetation programs are well underway and are vital to the total scene, they take time to develop and many bird species have short lives.

Results show species were already in decline in 1966 and as we now know the progress of this decline is continuing. There is no easy fix to this situation as for decades the cry has been for more trees, but very little attention has been given to the importance of understorey. Without doubt it is this latter vegetation and open-shrubland formation that is in need of urgent attention.

This is a major undertaking as many factors need to be addressed: urban development, pastoral priorities and industrial expansion. Dr David Paton is continually bringing to the Government's attention the problems occurring with our native birds.

We must continue to encourage more pastoral owners to dedicate a portion of their land to the Native Vegetation Heritage Agreement Act, 1991. Friends of my wife and I at Dutton in the mid north of South Australia have three sections of their land under the Heritage Agreement and the results of increased native vegetation mixed with old woodland are more than encouraging. This area is regularly monitored both for plant and bird species and the owners receive great joy by watching these results and knowing they are playing their part, not only for the birds but are helping the ecosystem in their region.

Appendix: Complete list of birds observed from 1966 to 1993

Emu *Dromaius novaehollandiae*
Stubble Quail *Coturnix pectoralis*
Blue-billed Duck *Oxyura australis*
Musk Duck *Biziura lobata*
Black Swan *Cygnus atratus*
Australian Shelduck *Tadorna tadornoides*
Australian Wood duck *Chenonetta jubata*
Mallard *Anas platyrhynchos*
Pacific Black Duck *Anas superciliosa*
Australasian Shoveller *Anas rhynchotis*
Grey Teal *Anas gracilis*
Chestnut Teal *Anas castanea*
Pink-eared Duck *Malacorhynchus membranaceus*
Hardhead *Aythya australis*
Australasian Grebe *Tachybaptus novaehollandiae*
Hoary-headed Grebe *Poliiocephalus poliocephalus*
Great Crested Grebe *Podiceps cristatus*
Darter *Anhinga melanogaster*
Little Pied Cormorant *Phalacrocorax melanoleucos*
Pied Cormorant *Phalacrocorax varius*
Little Black Cormorant *Phalacrocorax sulcirostris*
Great Cormorant *Phalacrocorax carbo*
Australian Pelican *Pelecanus conspicillatus*
White-faced Heron *Egretta novaehollandiae*
Little Egret *Egretta garzetta*
White-necked Heron *Ardea pacifica*
Great Egret *Ardea alba*
Nankeen Night Heron *Nycticorax caledonicus*
Australian White Ibis *Threskiornis molucca*
Straw-necked Ibis *Threskiornis spinicollis*
Royal Spoonbill *Platalea regia*
Yellow-billed Spoonbill *Platalea flavipes*
Black-shouldered Kite *Elanus axillaris*
Black Kite *Milvus migrans*
Whistling Kite *Haliastur sphenurus*
Spotted Harrier *Circus assimilis*
Swamp Harrier *Circus approximans*
Brown Goshawk *Accipiter fasciatus*
Collared Sparrowhawk *Accipiter cirrhocephalus*
Wedge-tailed Eagle *Aquila audax*
Little Eagle *Hieraaetus morphnoides*
Brown Falcon *Falco berigora*
Australian Hobby *Falco longipennis*

Black Falcon *Falco subniger*
 Peregrine Falcon *Falco peregrinus*
 Nankeen Kestrel *Falco cenchroides*
 Australian Spotted Crake *Porzana fluminea*
 Purple Swamphen *Porphyrio porphyrio*
 Dusky Moorhen *Gallinula tenebrosa*
 Black-tailed Native-hen *Gallinula ventralis*
 Eurasian Coot *Fulica atra*
 Little Button-quail *Turnix velox*
 Painted Button-quail *Turnix varia*
 Red-necked Stint *Calidris ruficollis*
 Sharp-tailed Sandpiper *Calidris acuminata*
 Black-winged Stilt *Himantopus himantopus*
 Black-fronted Dotterel *Elseyornis melanops*
 Red-kneed Dotterel *Erythronyx cinctus*
 Banded Lapwing *Vanellus tricolor*
 Masked Lapwing *Vanellus miles*
 Silver Gull *Larus novaehollandiae*
 Caspian Tern *Sterna caspia*
 Whiskered Tern *Chlidonias hybridus*
 Rock Dove *Columba livia*
 Spotted Turtle-Dove *Streptopelia chinensis*
 Common Bronzewing *Phaps chalcoptera*
 Brush Bronzewing *Phaps elegans*
 Crested Pigeon *Ocyphaps lophotes*
 Diamond Dove *Geopelia cuneata*
 Peaceful Dove *Geopelia striata*
 Barbary Dove *Streptopelia risoria* (exotic)
 Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus*
 Galah *Cacatua roseicapilla*
 Long-billed Corella *Cacatua tenuirostris*
 Little Corella *Cacatua sanguinea*
 Sulphur-crested Cockatoo *Cacatua galerita*
 Cockatiel *Nymphicus hollandicus*
 Rainbow Lorikeet *Trichoglossus haematodus*
 Musk Lorikeet *Glossopsitta concinna*
 Purple-crowned Lorikeet *Glossopsitta porphyrocephala*
 Crimson Rosella *Platycercus elegans adelaidae*
 Blue Bonnet *Northiella haematogaster haematogaster*
 Red-rumped Parrot *Psephotus haematonotus*
 Budgerigar *Melopsittacus undulatus*
 Blue-winged Parrot *Neophema chrysostoma*
 Elegant Parrot *Neophema elegans*
 Pallid Cuckoo *Cuculus pallidus*
 Fan-tailed Cuckoo *Cacomantis flabelliformis*

Black-eared Cuckoo *Chrysococcyx osculans*
 Horsefield's Bronze-Cuckoo *Chrysococcyx basalis*
 Shining bronze-Cuckoo *Chrysococcyx lucidus*
 Southern Boobook *Ninox novaeseelandiae*
 Barn Owl *Tyto alba*
 Tawny Frogmouth *Podargus strigoides*
 Spotted Nightjar *Eurostopodus argus*
 Australian Owlet-nightjar *Aegotheles cristatus*
 Laughing Kookaburra *Dacelo novaeguineae*
 Red-backed Kingfisher *Todiramphus pyrrhopygia*
 Sacred Kingfisher *Todiramphus sanctus*
 Rainbow Bee-eater *Merops ornatus*
 White-throated Treecreeper *Cormobates leucophaeus grisescens*
 Brown Treecreeper *Climacteris picumnus*
 Superb Fairy-wren *Malurus cyaneus leggei*
 Spotted Pardalote *Pardalotus punctatus*
 Yellow-rumped Pardalote *Pardalotus punctatus xanthopyge*
 Striated Pardalote *Pardalotus striatus substriatus*
 White-browed Scrubwren *Sericornis frontalis rosinae*
 Weebill *Smicrornis brevirostris occidentalis*
 White-throated Gerygone *Gerygone olivacea*
 Brown Thornbill *Acanthiza pusilla*
 Chestnut-rumped Thornbill *Acanthiza uropygialis*
 Buff-rumped Thornbill *Acanthiza reguloides australis*
 Yellow-rumped Thornbill *Acanthiza chrysorrhoa leighi*
 Yellow Thornbill *Acanthiza nana modesta*
 Striated Thornbill *Acanthiza lineata clelandi*
 Southern Whiteface *Aphelocephala leucopsis*
 Red Wattlebird *Anthochaera carunculata woodwardi*
 Little Wattlebird *Anthochaera chrysoptera*
 Noisy Miner *Manorina melanocephala*
 Yellow-faced Honeyeater *Lichenostomus chrysops samueli*
 Singing Honeyeater *Lichenostomus virescens sonorus*
 Yellow-plumed Honeyeater *Lichenostomus ornatus*
 Fuscous Honeyeater *Lichenostomus fuscus*
 White-plumed Honeyeater *Lichenostomus penicillatus*
 Black-chinned Honeyeater *Melithreptus gularis*
 Brown-headed Honeyeater *Melithreptus brevirostris pallidiceps*
 White-naped Honeyeater *Melithreptus lunatus*
 Crescent Honeyeater *Phylidonyris pyrrhoptera halmaturina*
 New Holland Honeyeater *Phylidonyris novaehollandiae*
 White-fronted Honeyeater *Phylidonyris albifrons*
 Tawny-crowned Honeyeater *Gliciphila melanops*
 Eastern Spinebill *Acanthorhynchus tenuirostris halmaturinus*
 Black Honeyeater *Certhionyx niger*

Crimson Chat *Epthianura tricolor*
 Orange Chat *Epthianura aurifrons*
 White-fronted Chat *Epthianura albifrons*
 Jacky Winter *Microeca fascinans*
 Scarlet Robin *Petroica boodang*
 Red-capped Robin *Petroica goodenovii*
 Rose Robin *Petroica rosea*
 Hooded Robin *Melanodryas cucullata*
 White-browed Babbler *Pomatostomus superciliosus*
 Varied Sittella *Daphoenositta chrysoptera pileata*
 Crested Shrike-tit *Falcunculus frontatus*
 Golden Whistler *Pachycephala pectoralis fuliginosa*
 Rufous Whistler *Pachycephala rufiventris*
 Grey Shrike-thrush *Colluricincla harmonica*
 Restless Flycatcher *Myiagra inquieta*
 Magpie-lark *Grallina cyanoleuca*
 Grey Fantail *Rhipidura albiscapa alisteri*
 Willie Wagtail *Rhipidura leucophrys*
 Black-faced Cuckoo-shrike *Coracina novaehollandiae melanops*
 White-winged Triller *Lalage tricolor*
 White-browed Woodswallow *Artamus superciliosus*
 Dusky Woodswallow *Artamus cyanopterus*
 Grey Butcherbird *Cracticus torquatus leucopterus*
 Australian Magpie *Gymnorhina tibicen telonocua*
 Grey Currawong *Strepera versicolor melanoptera*
 Australian Raven *Corvus coronoides*
 Little Raven *Corvus mellori*
 White-winged Chough *Corcorax melanorhamphos whiteae*
 Apostlebird *Struthidea cinerea*
 Singing Bushlark *Mirafra javanica secunda*
 Eurasian Skylark *Alauda arvensis*
 Richard's Pipit *Anthus australis*
 House Sparrow *Passer domesticus*
 Zebra Finch *Taeniopygia guttata castanotis*
 Red-browed Finch *Neochmia temporalis*
 Diamond Firetail *Stagonopleura guttata*
 European Greenfinch *Carduelis chloris*
 European Goldfinch *Carduelis carduelis britannica*
 Mistletoebird *Dicaeum hirundinaceum*
 Welcome Swallow *Hirundo neoxena*
 Tree Martin *Hirundo nigricans*
 Fairy Martin *Petrochelidon nigricans neglecta*
 Clamorous Reed-Warbler *Acrocephalus australis*
 Little Grassbird *Megalurus gramineus goulburni*
 Rufous Songlark *Cincloramphus mathewsi*

Brown Songlark *Cincloramphus cruralis*
Silvereye *Zosterops lateralis pinarochrous*
Common Blackbird *Turdus merula*
Common Starling *Sturnus vulgaris*

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