

## Nurragingy Reserve, New South Wales

(Supplementary Data)

**Aim:** Avian research at Nurragingy Reserve (in conjunction with Scheyville National Park, and, Agnes Banks, Windsor Downs, Prospect and Wianamatta nature reserves) is an ongoing component of a larger longitudinal study to document and monitor the avian faunas of remnant areas of Cumberland Plain Woodland in the north-western sector of the Cumberland Plain.

**Location:** 33°45'23"S; 150°51'43"E. Situated in the western Sydney suburb of Doonside.

**Description:** Nurragingy Reserve (Fig. 1) is located on a small flood plain adjacent to Eastern Creek and covers an area of 68 hectares. Several semi-permanent pools are dispersed alongside this creek and are filled at irregular intervals. One depression in the western section of the banding site contained water for several months during the first banding period (2001–03). The underlying rock strata consist mainly of shale. To the immediate north and south of the Reserve, Eastern Creek runs through mainly open grassland. A large industrial area is to the west and residential areas are to the east. The southern section of the Reserve has been partially cleared with many

grassed picnic areas and a small artificial lake established. The vegetation in the northern part has remained relatively intact although several walking and vehicle tracks crisscross the area. The banding site was in the far northern section of the Reserve that is fenced off from general public access. The main tree species are Grey Box *Eucalyptus molucana*, Forest Red Gum *E. tereticornis* and Cabbage Gum *E. amplifolia* with an understorey of predominantly Blackthorn *Bursaria spinosa* (Smith and Smith 2013). The dominant community has been classified as Cumberland Shale Plains Woodland and is a form of Cumberland Plain Woodland (Smith and Smith 2013). It is listed as a *critically endangered* ecological community both at state and commonwealth level (NSW Scientific Committee 2009; Threatened Species Scientific Committee 2008).

**Status History:** 1970 – purchased by NSW Government as part of an open space corridor along Eastern Creek; 1981 – leased to Blacktown City Council for development as a passive recreational area; 2001 – ownership transferred to Blacktown City Council (Blacktown City Council 2011; Fairly and Waterhouse 2005).



Figure 1. Satellite image of banding site.

Image courtesy of Google Earth

**Previous Records:** Bird lists (Appendix 1) have been compiled by Keast (1995) (sightings from 1930 to 1960 listed under ‘Doonside Woodland’) and Limburg (1994) (sightings from 1984–1994 specifically at Nurragingy Reserve).

Keast doesn’t stipulate the exact location of his ‘Doonside Woodland’ but it was undoubtedly either what is now Nurragingy Reserve or close by.

Limburg’s (1994) listing covers the entire Reserve. It includes waterbirds seen on or near the natural ponds and artificial lake in the southern section of the Reserve that were rarely found in the northern section of the Reserve where banding took place.

**Duration of Project:** July 2001 – June 2003 and August 2009 – May 2010. Visits were not made in May and August 2002, May 2003 and September 2009 due to inclement weather.

**METHODS**

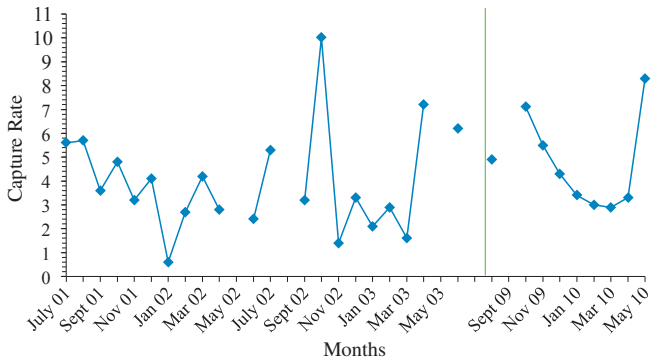
Banding took place once each month, weather permitting. On most occasions 15 nets were erected, total length averaging 192 metres (range 90–246 metres) and were open from sunrise for an average of 5.25 hours (range 4–6 hours). Nets were erected in the same positions each banding session. Birds were individually marked using bands supplied by the Australian Bird and Bat Banding Scheme (ABBBS). Capture rates are presented as the number of birds trapped per hour per 100 metres of net erected. To calculate the percentage of species re-trapped a ‘re-trap’ designation was assigned to a bird that was caught subsequent to banding, ignoring the number of times that bird was caught or the length of time elapsed. Records were also maintained of all species incidentally observed or heard at the study site on each banding day.

**RESULTS AND DISCUSSION**

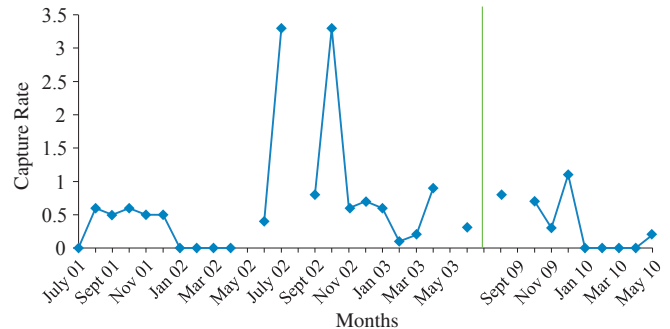
A total of 1021 birds, comprising 43 species, was trapped over the two study periods. Overall, a total of 93 bird species was recorded but this did not include waterbirds that were observed flying over the site (Table 1; Appendix 2).

Species capture rates are presented in Table 1. Overall capture rates are displayed in Figure 2. The major peaks in October 2002, April 2003, October 2009 and May 2010 are attributed to the influx of flocks of Red-browed Finches *Neochmia temporalis* into the banding area, although the capture rates of White-plumed Honeyeaters *Lichenostomus penicillatus* (Oct. 2002) (Fig. 3), Superb Fairy-wrens *Malurus cyaneus* (Oct. 2009) (Fig. 4) and Silvereyes (May 2010) also contributed. The White-plumed Honeyeater is a locally nomadic species that moves in and out of the Reserve (Fig. 3) although some appear to be resident (see Re-trap Section). Some minor peaks reflect the movement of migratory species (particularly Silvereyes *Zosterops lateralis* and Yellow-faced Honeyeaters *Lichenostomus chrysops*) during their northward passage in May–August.

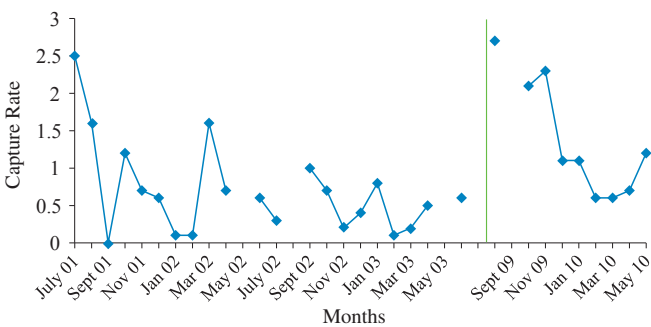
The most frequently trapped species overall were the Red-browed Finch, White-plumed Honeyeater, Silvereye and Superb Fairy-wren in descending order (Table 1). When the percentage proportion that these species comprise the overall trapped community is examined for October–April in 2001–02, 2002–03 and 2009–10 (Table 2) it can be seen that: the Superb Fairy-wren percentage declined in 2002–03 as did their capture rate (Fig. 4); the number of Silvereyes visiting the reserve showed an overall decline; the percentages of Red-browed Finches and Eastern Yellow Robins *Eopsaltria australis* (Fig. 5) remained fairly constant while the population of White-plumed Honeyeaters showed a marked increase in 2002–03 (Fig. 3).



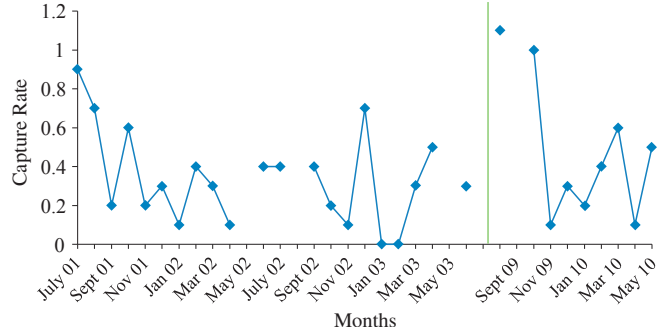
**Figure 2.** Capture rates of all birds at Nurragingy Reserve (2001–03; 2009–10).



**Figure 3.** Capture rates of White-plumed Honeyeaters at Nurragingy Reserve (2001–03; 2009–10).



**Figure 4.** Capture rates of Superb Fairy-wrens at Nurragingy Reserve (2001–03; 2009–10).



**Figure 5.** Capture rates of Eastern Yellow Robins at Nurragingy Reserve (2001–03; 2009–10).



**Table 2**

Most commonly trapped species at Nurragingy Reserve from October 2001 to April 2002, October 2002 to April 2003 and October 2009 to April 2010. n = number trapped; % = percentage of the total number of birds trapped in each period.

Species	Oct. 2001 – Apr. 2002		Oct. 2002 – Apr. 2003		Oct. 2009 – Apr. 2010	
	n	%	n	%	n	%
Superb Fairy-wren	56	22.7	23	9.5	95	28.4
Red-browed Finch	52	21.1	52	21.5	96	28.7
Silvereye	44	17.8	16	6.6	12	3.6
Eastern Yellow Robin	22	8.9	19	7.9	28	8.4
White-plumed Honeyeater	19	7.7	48	19.8	23	6.9
Yellow-faced Honeyeater	7	2.8	10	4.1	14	4.2

### Re-traps

For the duration of this study 231 individuals of 13 species were retrapped (Table 1). The times between banding and subsequent recapture are recorded in Table 3.

Only three birds caught in the first banding period were retrapped in the second period:

- White-plumed Honeyeater banded on 13 October 2002 and retrapped on 13 December 2009 – 7 years 2 months.
- Eastern Yellow Robin banded on 9 June 2002 and then caught on 14 July 2002 and 8 July 2003 and not again until 9 August 2009, 11 October 2009 and 16 May 2010 – 7 years 11 months.
- Eastern Yellow Robin banded on 14 October 2001 and trapped on 11 November 2001, 9 March 2003 and then on 9 August 2009, 21 February 2010 and 14 March 2010 – 8 years 5 months.

It was not surprising that the two Eastern Yellow Robins were re-trapped as the species is a territorial resident within the Reserve.

Superb Fairy-wrens were caught regularly in both banding periods, with the maximum time elapsed between banding and recapture of 23 months. The lack of any retrapped Superb Fairy-wrens from the first to the second banding period was of interest as this species is known to live in the wild for longer than six years (ABBBS - longevity data) – the time gap between the first and second banding period. It seems that there may have been a complete turnover of the population of this species during our absence. A similar situation occurred at Agnes Banks Nature Reserve (Farrell *et al.* 2012) although the gap between the two banding periods was one year longer.

The maximum time elapsed for another common resident, the Red-browed Finch, was 17 months. This species is rarely retrapped more than two years after banding, although in a similar habitat at Scheyville National Park a few birds survived at least four years (Farrell 2011).

### Movements

Only two banded birds were reported to the ABBBS from outside the Reserve. An Olive-backed Oriole *Oriolus sagittatus* was found injured on a road bordering the Reserve and a White-

plumed Honeyeater was found dead two kilometres away in a north-westerly direction.

### Migrant species

Apart from Yellow-faced Honeyeaters and Silvereyes, whose periodic occurrence consisted of both local and migrant individuals, ten ‘summer’ migratory species have been recorded visiting the site. They include six species of cuckoo (Channel-billed *Scythrops novaehollandiae*, Fan-tailed *Cacomantis flabelliformis*, Pallid *Cacomantis pallidus*, Horsfield’s *Chalcites basalis* and Shining *Chalcites lucidus* Bronze-Cuckoos, and Eastern Koel *Eudynamys orientalis*), Pacific Baza *Aviceda subcristata*, White-throated Gerygone *Gerygone albogularis*, Rufous Whistler *Pachycephala rufiventris* and Rufous Fantail *Rhipidura rufifrons*. Only the Shining Bronze-Cuckoo, Fan-tailed Cuckoo, Rufous Whistler and Rufous Fantail were captured during this study. The Scarlet Honeyeater *Myzomela sanguinolenta* mainly frequents the site from late spring/summer although it was sighted up until April in 2002.

The Rose Robin *Petroica rosea* is an autumn/winter altitudinal migrant (Higgins and Peter 2002) to the Cumberland Plain and was recorded at the site from early April to September.

Golden Whistlers *Pachycephala pectoralis*, a partial migrant, arrived as early as January and departed in October while Rufous Whistlers arrived in September/October and left as late as March the following year. These two species are not mutually exclusive at the site as an overlap of three months was recorded in 2009 (Table 1). A similar scenario was apparent at Agnes Banks Nature Reserve (Farrell *et al.* 2012) but there was less overlap of residency period at that site.

### Exotic species

A number of exotic species has become established in the Reserve: House Sparrow *Passer domesticus*, Rock Dove *Columba livia*, Spotted Dove *Streptopelia chinensis*, Red-whiskered Bulbul *Pycnonotus jocosus*, Common Blackbird *Turdus merula*, Common Starling *Sturnus vulgaris* and Common Myna *Sturnus tristis* (the latter four are frequently sighted and/or trapped at the banding site).

### Changes in avian community

Several species (Table 1) that were captured in the first banding period but not trapped, sighted or heard during the second period were:

Table 3

Months between banding and recapture of species at Nurragingy Reserve including both first and second study periods. Maximum times are highlighted. Birds banded in the first study period and then captured in the second study period are not included (White-plumed Honeyeater and Eastern Yellow Robin - see text). Totals include multiple captures of individual birds.

Species	Months after banding																								Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Superb Fairy-Wren	16	11	16	11	6	3	5	7	3	2	7	5	1	5	3	4	3	2		1			1		112
Yellow Thornbill		1				1	1																		3
Yellow-faced Honeyeater			1							1															2
White-plumed Honeyeater	5	6	7	2	1	2	1	4	6		5	4						1							44
Noisy Miner							1																		1
Crested Shrike-tit							1																		1
Golden Whistler	4	3	1								1														9
Grey Shrike-thrush	1																								1
Willie Wagtail	1		1	1												1									4
Eastern Yellow Robin	11	11	8	3	4	4	3	2		1	1	2	1	2		2	1		1	1	1	1		60	
Silvereye	4	1	3									2		1											11
Red-whiskered Bulbul	1										1														2
Red-browed Finch	9	27	12	8	8	9	4	11		2	1			2	2	1	1								97

- White-winged Chough *Corcorax melanorhamphos* – this species was regularly sighted and heard during the first banding period with one being trapped in December 2002. The colony generally inhabits the southern section of the reserve around the picnic areas so it wasn't surprising that none were sighted during the second banding period.
- White-cheeked Honeyeaters *Phylidonyris niger* were sighted and trapped during the summer and autumn of 2002/3.
- A single Azure Kingfisher *Ceyx azureus* was banded in September 2001 but not recorded after that. Several nets were erected adjacent to Eastern Creek but none spanned the creek bed so the capture of this species may have been fortuitous.
- One Nutmeg Mannikin *Lonchura punctulata*, captured in December 2001, was the only record of this species during our study – although it had been observed previously (Limburg 1994).

A Brown Honeyeater *Lichmera indistincta*, captured in the second period, was the only species not previously banded. It was captured in November 2009 in association with several other honeyeater species (White-plumed, Yellow-faced and Scarlet honeyeaters).

Species that were recorded during the second period but not observed during the first period are listed in Appendix 2. Of particular note was the sighting of the Regent Honeyeater *Anthochaera phrygia* which is now rarely recorded on the Cumberland Plain and is listed as *critically endangered* (Garnett *et al.* 2011). Other sightings were mostly single occurrences.

No Double-barred Finches *Taeniopygia bichenovii* were trapped during this study although several were observed during the first period. Their disappearance from June 2002 at this site

and from Agnes Banks Nature Reserve from August 2008 to July 2009 where, during a previous project, they were regularly captured (Farrell *et al.* 2012) must raise concerns about the continued viability of this species in small areas of native vegetation on the Cumberland Plain.

#### Historical changes in the avian community

Utilising data from the present study and from Keast (1995) and Limburg (1994) a picture of the avian community over 80 years can be outlined. A number of species listed by Keast have not been sighted at Nurragingy Reserve for many years and are thought to be locally extinct in the north-west sector of the Cumberland Plain.

These include:

- Bush Stone-curlew *Burhinus grallarius* – last sighted at Orchard Hills (near Penrith) in April 2010 (Cumberland Bird Observers' Club (CBOC) database)
- Brown Treecreeper *Climacteris picumnus* – last published record was at Scheyville National Park in 1992 (Egan *et al.* 1997); sighted at Cobbitty in June 1996 (E. Vella pers. comm.).
- Hooded Robin *Melanodryas cucullata* – last published record was at Scheyville National Park in 1973 (Egan *et al.* 1997); reported at Cobbitty in 1999 (E. Vella pers. comm.).
- Painted Honeyeater *Grantiella picta* – last published sighted near Wilberforce in 1982 (Hoskins 1991); photographed in October 2013 at Pitt Town Lagoon (E. Vella pers. comm.).
- Diamond Firetail *Stagonopleura guttata* – last published record was at Scheyville National Park in 1994 (Egan *et al.* 1997); sighted at Cobbitty in June 1996 (E. Vella pers. comm.).

- Southern Whiteface *Aphelocephala leucopsis* – not sighted in this area since Keast's (1995) listing but was recorded in the south-west section of the Cumberland Plain in 1972 (Hoskins 1991).
- Black-eared Cuckoo *Chalcites osculans* – last published record was at Scheyville National Park in 1987 (Egan *et al.* 1997).

Others species, listed in Keast (1995), that have disappeared or occur infrequently at Nurragingy Reserve are:

- Brown *Acanthiza pusilla* and Buff-rumped *A. reguloides* thornbills – not observed by Limburg (1994) or this study but still common at many other sites on the Cumberland Plain (e.g. Scheyville National Park and Windsor Downs Nature Reserve – authors' pers. obs.).
- Yellow-rumped Thornbill *Acanthiza chrysorrhoa* – not observed by Limburg (1994) or this study but still sighted in the Hawkesbury district (authors' pers. obs., CBOC database).
- Red-capped Robin *Petroica goodenovii* – not observed but small numbers still occur at both Castlereagh and Windsor Downs nature reserves (authors' pers. obs.).
- Speckled Warbler *Chthonicola sagittata* – not observed but numbers still occur at Windsor Downs Nature Reserve, Scheyville National Park and Shanes Park (CBOC database; authors' pers. obs.).

The loss or decline of the species listed above can be attributed to the change in or disappearance of their natural habitat (Hoskins 1991; Egan *et al.* 1997; Recher 2010). It is therefore essential that reserves such as Nurragingy, in conjunction with native vegetation on private land, are continually preserved as urbanisation continues to encroach on the remaining remnants across the Cumberland Plain.

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## Appendix 1

Common Name	Scientific Name	Keast 1930-60		Limburg 1984-94		Present Study		Common Name	Scientific Name	Keast 1930-60		Limburg 1984-94		Present Study	
						2001-3	2009-10					2001-3	2009-10	2001-3	2009-10
Stubble Quail	<i>Coturnix pectoralis</i>			X				Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	X	X	X	X		
Brown Quail	<i>Coturnix ypsilophora</i>			X				Southern Boobook	<i>Ninox novaeseelandiae</i>	X					
Rock Dove	<i>Columba livia</i>			X	X	X		Azure Kingfisher	<i>Ceyx azureus</i>	X	X	X			
Spotted Dove	<i>Streptopelia chinensis</i>	X	X	X	X			Laughing Kookaburra	<i>Dacelo novaeguineae</i>	X	X	X	X		
Common Bronzewing	<i>Phaps chalcoptera</i>			X	X	X		Sacred Kingfisher	<i>Todiramphus sanctus</i>	X	X	X	X		
Crested Pigeon	<i>Ocyphaps lophotes</i>			X	X			Dollarbird	<i>Eurystomus orientalis</i>		X	X			
Peaceful Dove	<i>Geopelia striata</i>			X		X		White-throated Treecreeper	<i>Cormobates leucophaea</i>	X	X	X			
Tawny Frogmouth	<i>Podargus strigoides</i>	X	X					Brown Treecreeper	<i>Climacteris picumnus</i>	X					
White-throated Needletail	<i>Hirundapus caudacutus</i>			X				Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>						X
Black-shouldered Kite	<i>Elanus axillaris</i>			X				Superb Fairy-wren	<i>Malurus cyaneus</i>	X	X	X	X		
Pacific Baza	<i>Aviceda subcristata</i>					X		White-browed Scrubwren	<i>Sericornis frontalis</i>	X		X	X		
Whistling Kite	<i>Haliastur sphenurus</i>					X		Speckled Warbler	<i>Chthonicola sagittata</i>	X	X				
Brown Goshawk	<i>Accipiter fasciatus</i>			X	X	X		Weebill	<i>Smicromis brevirostris</i>	X	X	X	X		
Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>			X	X			White-throated Gerygone	<i>Gerygone albogularis</i>	X	X	X	X		
Grey Goshawk	<i>Accipiter novaehollandiae</i>			X				Striated Thornbill	<i>Acanthiza lineata</i>	X					X
Little Eagle	<i>Hieraaetus morphnoides</i>			X	X			Yellow Thornbill	<i>Acanthiza nana</i>	X	X	X	X		
Nankeen Kestrel	<i>Falco cenchroides</i>			X				Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	X					
Brown Falcon	<i>Falco berigora</i>			X				Buff-rumped Thornbill	<i>Acanthiza reguloides</i>	X					
Australian Hobby	<i>Falco longipennis</i>			X	X	X		Brown Thornbill	<i>Acanthiza pusilla</i>	X					
Peregrine Falcon	<i>Falco peregrinus</i>			X		X		Southern Whiteface	<i>Aphelocephala leucopsis</i>	X					
Bush Stone-curlew	<i>Burhinus grallarius</i>			X				Spotted Pardalote	<i>Pardalotus punctatus</i>	X	X	X	X		
Masked Lapwing	<i>Vanellus miles</i>			X	X			Striated Pardalote	<i>Pardalotus striatus</i>	X	X	X	X		
Painted Button-quail	<i>Turnix varius</i>	X	X					Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>		X	X	X		
Yellow-tailed Black-Cockatoo	<i>Calyptorhynchus funereus</i>			X	X			Lewin's Honeyeater	<i>Meliphaga lewinii</i>		X				X
Galah	<i>Eolophus roseicapillus</i>			X	X			Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>		X	X	X		
Long-billed Corella	<i>Cacatua tenuirostris</i>			X		X		Yellow-tufted Honeyeater	<i>Lichenostomus melanops</i>		X				
Little Corella	<i>Cacatua sanguinea</i>			X	X	X		Fuscous Honeyeater	<i>Lichenostomus fuscus</i>	X	X				X
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>			X	X	X		White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>		X	X	X		
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>			X	X	X		Bell Miner	<i>Manorina melanophrys</i>		X				X
Scaly-breasted Lorikeet	<i>Trichoglossus chlorolepidotus</i>			X	X			Noisy Miner	<i>Manorina melanocephala</i>	X	X	X	X		
Musk Lorikeet	<i>Glossopsitta concinna</i>					X	X	Little Wattlebird	<i>Anthochaera chrysoptera</i>		X	X	X		
Little Lorikeet	<i>Glossopsitta pusilla</i>			X	X	X	X	Regent Honeyeater	<i>Anthochaera phrygia</i>	X					X
Crimson Rosella	<i>Platycercus elegans</i>					X		Red Wattlebird	<i>Anthochaera carunculata</i>		X	X	X		
Eastern Rosella	<i>Platycercus eximius</i>			X	X	X	X	Scarlet Honeyeater	<i>Myzomela sanguinolenta</i>	X	X	X	X		
Swift Parrot	<i>Lathamus discolor</i>					X		Brown Honeyeater	<i>Lichmera indistincta</i>						X
Red-rumped Parrot	<i>Psephotus haematonotus</i>			X	X	X		New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>		X				
Eastern Koel	<i>Eudynamys orientalis</i>			X	X	X		White-cheeked Honeyeater	<i>Phylidonyris niger</i>						X
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>						X	Black-chinned Honeyeater	<i>Melithreptus gularis</i>	X					
Horsfield's Bronze-Cuckoo	<i>Chalcites basalis</i>			X	X	X	X	White-naped Honeyeater	<i>Melithreptus lunatus</i>	X	X	X	X		
Black-eared Cuckoo	<i>Chalcites osculans</i>			X	X			Noisy Friarbird	<i>Philemon corniculatus</i>	X	X	X	X		
Shining Bronze-Cuckoo	<i>Chalcites lucidus</i>			X	X	X	X	Painted Honeyeater	<i>Grantiella picta</i>	X					
Pallid Cuckoo	<i>Cacomantis pallidus</i>			X	X	X	X	Eastern Whipbird	<i>Psophodes olivaceus</i>	X		X	X		

## Appendix 1 (continued)

Common Name	Scientific Name	Keast 1930-60	Limburg 1984-94	Present Study		Common Name	Scientific Name	Keast 1930-60	Limburg 1984-94	Present Study	
				2001-3	2009-10					2001-3	2009-10
Varied Sittella	<i>Daphoenositta chrysoptera</i>	X	X	X	X	White-winged Chough	<i>Corcorax melanorhamphos</i>	X	X		
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	X	X	X	X	Apostlebird	<i>Struthidea cinerea</i>				
White-bellied Cuckoo-shrike	<i>Coracina papuensis</i>	X	X			Jacky Winter	<i>Microeca fascians</i>	X			
Cicadabird	<i>Coracina tenuirostris</i>	X				Red-capped Robin	<i>Petroica goodenovii</i>	X			
White-winged Triller	<i>Lalage sueurii</i>	X	X			Rose Robin	<i>Petroica rosea</i>		X	X	X
Crested Shrike-tit	<i>Falcunculus frontatus</i>	X	X	X	X	Hooded Robin	<i>Melanodryas cucullata</i>	X			
Golden Whistler	<i>Pachycephala pectoralis</i>	X	X	X	X	Eastern Yellow Robin	<i>Eopsaltria australis</i>	X	X	X	X
Rufous Whistler	<i>Pachycephala rufiventris</i>	X	X	X	X	Australian Reed-Warbler	<i>Acrocephalus australis</i>		X		
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	X	X	X	X	Little Grassbird	<i>Megalurus gramineus</i>		X		
Olive-backed Oriole	<i>Oriolus sagittatus</i>	X	X	X	X	Rufous Songlark	<i>Cincloramphus mathewsi</i>		X		
Masked Woodswallow	<i>Artamus personatus</i>	X				Silvereye	<i>Zosterops lateralis</i>	X	X	X	X
White-browed Woodswallow	<i>Artamus superciliosus</i>	X	X			Welcome Swallow	<i>Hirundo neoxena</i>		X	X	X
Dusky Woodswallow	<i>Artamus cyanopterus</i>	X	X	X	X	Fairy Martin	<i>Petrochelidon ariel</i>		X		
Grey Butcherbird	<i>Cracticus torquatus</i>	X	X	X	X	Tree Martin	<i>Petrochelidon nigricans</i>		X		
Australian Magpie	<i>Cracticus tibicen</i>	X	X	X	X	Bassian Thrush	<i>Zoothera lunulata</i>		X		
Pied Currawong	<i>Strepera graculina</i>	X	X	X	X	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>		X	X	X
Spangled Drongo	<i>Dicrurus bracteatus</i>		X			Common Blackbird	<i>Turdus merula</i>		X	X	X
Rufous Fantail	<i>Rhipidura rufifrons</i>	X	X	X	X	Common Starling	<i>Sturnus vulgaris</i>	X	X	X	X
Grey Fantail	<i>Rhipidura albiscapa</i>	X	X	X	X	Common Myna	<i>Sturnus tristis</i>		X	X	X
Willie Wagtail	<i>Rhipidura leucophrys</i>	X	X	X	X	Mistletoebird	<i>Dicaeum hirundinaceum</i>		X	X	X
Australian Raven	<i>Corvus coronoides</i>	X	X	X	X	Zebra Finch	<i>Taeniopygia guttata</i>	X			
Leaden Flycatcher	<i>Myiagra rubecula</i>	X	X	X	X	Double-barred Finch	<i>Taeniopygia bichenovii</i>	X	X	X	
Satin Flycatcher	<i>Myiagra cyanoleuca</i>		X			Red-browed Finch	<i>Neochmia temporalis</i>	X	X	X	X
Restless Flycatcher	<i>Myiagra inquieta</i>	X	X		X	Diamond Firetail	<i>Stagonopleura guttata</i>	X			
Black-faced Monarch	<i>Monarcha melanopsis</i>		X	X		Nutmeg Mannikin	<i>Lonchura punctulata</i>		X	X	
Magpie-lark	<i>Grallina cyanoleuca</i>	X	X	X	X	House Sparrow	<i>Passer domesticus</i>		X	X	



Appendix 2

Species observed but not captured at Nurrungy Reserve from July 2001 – June 2003; August 2009 – May 2010.

Common Name	Scientific Name	J	A	S	O	N	D	J	F	M	A	J	J	S	O	N	D	J	F	M	A	J	A	O	N	D	J	F	M	A	M
		l	g	p	t	v	c	n	b	r	r	n	l	p	t	v	c	n	b	r	r	n	g	t	v	c	n	b	r	r	y
Rock Dove	<i>Columba livia</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Bronzewing	<i>Phaps chalcoptera</i>																														
Crested Pigeon	<i>Ocyphaps lophotes</i>																														
Peaceful Dove	<i>Geopelia striata</i>																														
Pacific Baza	<i>Aviceda subcristata</i>																														
Whistling Kite	<i>Haliastur sphenurus</i>																														
Brown Goshawk	<i>Accipiter fasciatus</i>																														
Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>																														
Little Eagle	<i>Hieraaetus morphnoides</i>																														
Australian Hobby	<i>Falco hypoleucos</i>																														
Peregrine Falcon	<i>Falco peregrinus</i>																														
Masked Lapwing	<i>Vanellus miles</i>																														
Yellow-tailed Black Cockatoo	<i>Calyptorhynchus funereus</i>																														
Galah	<i>Eolophus roseicapillus</i>																														
Long-billed Corella	<i>Cacatua tenuirostris</i>																														
Little Corella	<i>Cacatua sanguinea</i>																														
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>																														
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>																														
Scaly-breasted Lorikeet	<i>Trichoglossus chlorolepidotus</i>																														
Musk Lorikeet	<i>Glossopsitta concinna</i>																														
Little Lorikeet	<i>Glossopsitta pusilla</i>																														
Eastern Rosella	<i>Platycercus eximius</i>																														
Red-rumped Parrot	<i>Psephotus haematonotus</i>																														
Eastern Koel	<i>Eudynamys orientalis</i>																														
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>																														
Horsfield's Bronze-cuckoo	<i>Chalcites basalus</i>																														
Pallid Cuckoo	<i>Cacomantis pallidus</i>																														
Dollarbird	<i>Eurystomus orientalis</i>																														
White-throated Treecreeper	<i>Cormobates leucophaea</i>																														
Satin Bowerbird	<i>Ptilinorhynchus violaceus</i>																														
Weebill	<i>Smicromis brevirostris</i>																														
White-throated Gerygone	<i>Gerygone albogularis</i>																														
Striated Thornbill	<i>Acanthiza lineata</i>																														
Lewin's Honeyeater	<i>Meliphaga lewinii</i>																														
Fuscous Honeyeater	<i>Lichenostomus fuscus</i>																														
Regent Honeyeater	<i>Anthochaera phrygia</i>																														
Noisy Friarbird	<i>Philemon corniculatus</i>																														
Varied Sitella	<i>Daphoenositta chrysoptera</i>																														
Black-faced Cuckoo-Shrike	<i>Coracina novaehollandiae</i>																														
Grey Butcherbird	<i>Cracticus torquatus</i>																														
Pied Currawong	<i>Strepera graculina</i>																														
Australian Raven	<i>Corvus coronoides</i>																														
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Restless Flycatcher	<i>Myiagra inquieta</i>																														
Black-faced Monarch	<i>Monarcha melanopsis</i>																														
Magpie-lark	<i>Grallina cyanoleuca</i>																														
Welcome Swallow	<i>Hirundo neoxena</i>																														
Common Myna	<i>Sturnus tristis</i>																														
Double-barred Finch	<i>Taeniopygia bichenovii</i>																														
House Sparrow	<i>Passer domesticus</i>																														

Species observed during the 1st banding period but not in the 2nd  
 Species observed during the 2nd banding period but not in the 1st