

Results from the long-term mistnetting project at North Ryde, commenced by the late S.G. (Bill) Lane in 1959

A.J. Leishman

4/101 Centaur Street, Revesby Heights NSW 2212

E-mail: alan.leishman@bigpond.com

This banding project was instigated by S.G. (Bill) Lane in 1959 as an integral part of the Co-operative Silvereye Project which set out to obtain data on long-distance movements of Silvereyes *Zosterops lateralis* (Hitchcock and Carrick 1960). The objectives of the project had been expanded by 1966 to study the movements of different breeding populations, longevity, and as far as possible the life history, of the Silvereye. This large-scale project was co-ordinated by Bill and incorporated the assistance of a number of banders along the eastern coast of the Australian mainland and Tasmania. In addition to collecting data on Silvereyes, data on other bush birds were also recorded and are presented herein. Mist Nets were introduced to Australian bird banding during 1958-1959 (Hitchcock and Carrick 1960) this enabled sites such as North Ryde to be operated efficiently. The capture of Silvereyes and most other bush birds previous to July 1958 had been either by trapping or capture of nestlings at nest. This site was also used by Bill and others for bander training.

DESCRIPTION OF SITE

The banding site was located on the corner of Wicks and Plassey Roads, North Ryde (33°47'04"S, 151°08'27"E), now known as Macquarie Park (Figure 1) and is 11 kilometres NW of the Sydney CBD. Because of destruction of the natural bushland by development, the site is no longer available.

The banding site was located on land within Lane Cove National Park and Northern Suburbs Cemetery (now Macquarie Park Cemetery). Lane Cove National Park abutts the northern side of Wicks Road and the eastern side of Plassey Road with the Cemetery abutting the southern side of Wicks Road and the western side of Plassey Road (Fig. 1).

The site was located on the flat ridge top and upper slopes of the southern side of the Lane Cove River valley. The underlying geology is Hawkesbury Sandstone. Vegetation consisted of Open Shrubland, Shrubland and Closed Shrubland with the vegetation being dominated by: Heath *Banksia ericifolia*, with Tick Bush *Kunzea ambigua*, Dwarf Apple *Angophora hispida*, Stringybark *Eucalyptus oblonga*, Scribbly Gums *E. haemastoma* and Narrow-leaved Scribbly Gum *E. racemosa* (Clarke and Benson 1987; Benson and Howell 1990) (Fig. 2). A wild fire in November 1964 burnt out the whole area. This event appeared to have had a major impact on the species caught for a number of years after the fire – *Banksia ericifolia*, a primary food source for Silvereyes and honeyeaters, has been shown to take up to six years to reach flowering maturity after a major fire (Bradstock and O'Connell 1988). No other changes to the vegetation were recorded.

Mean annual rainfall for the area is 1234 millimetres. 1968 recorded the lowest rainfall with 710 millimetres while the years 1979–1982 were all well below average.

A number of issues affected the site. These included: the dumping and clearing of rubbish; closure of Plassey and Wicks Roads to traffic and development of a caravan park in Plassey

Road in 1960; the installation of transmission power lines in 1967; the development of a waste fill area adjacent to Wicks Road in 1971; and, the ongoing clearing of vegetation and expansion of the Northern Suburbs [Macquarie Park] Cemetery (Fig. 1).

METHODS

Banding was carried out using a range of net lengths from nine to 18 metres and generally with 31 millimetre-mesh size. The number of nets utilised varied considerably but increased during the later years of the project. During 1959 to 1962 only one to four nets were used per banding session, while 25 nets were used during one banding session in 1979. Numbers of banding visits to the site per year varied from 53 in 1961 to five in 1968. For the first three years (1959–1961) no data were recorded as to the number of nets used or the number of hours they were open. This has resulted in capture rates (birds/100m of net/hour) only being available for the years 1962–1982. When comparing yearly capture rates within this study the number and timing of visits per year, hours of netting, and number of nets used need to be taken into account, as all of these were not consistent and varied widely from year to year.

After the November 1964 fire banding ceased and was not resumed until June 1965 when some vegetation had regenerated and the annual movements of Silvereyes into North Ryde commenced.

Scientific names of all species are presented in Table 1 and follow the taxonomy outlined in Christidis and Boles (2008).

RESULTS

Approximately eleven thousand birds of sixty-five species were banded during this project (Table 1).

The number banded, number recaptured, number of times recaptured, recapture percentage, longevity (measured in months), control recoveries, maximum distance travelled in kilometres and capture rates for all species banded are presented

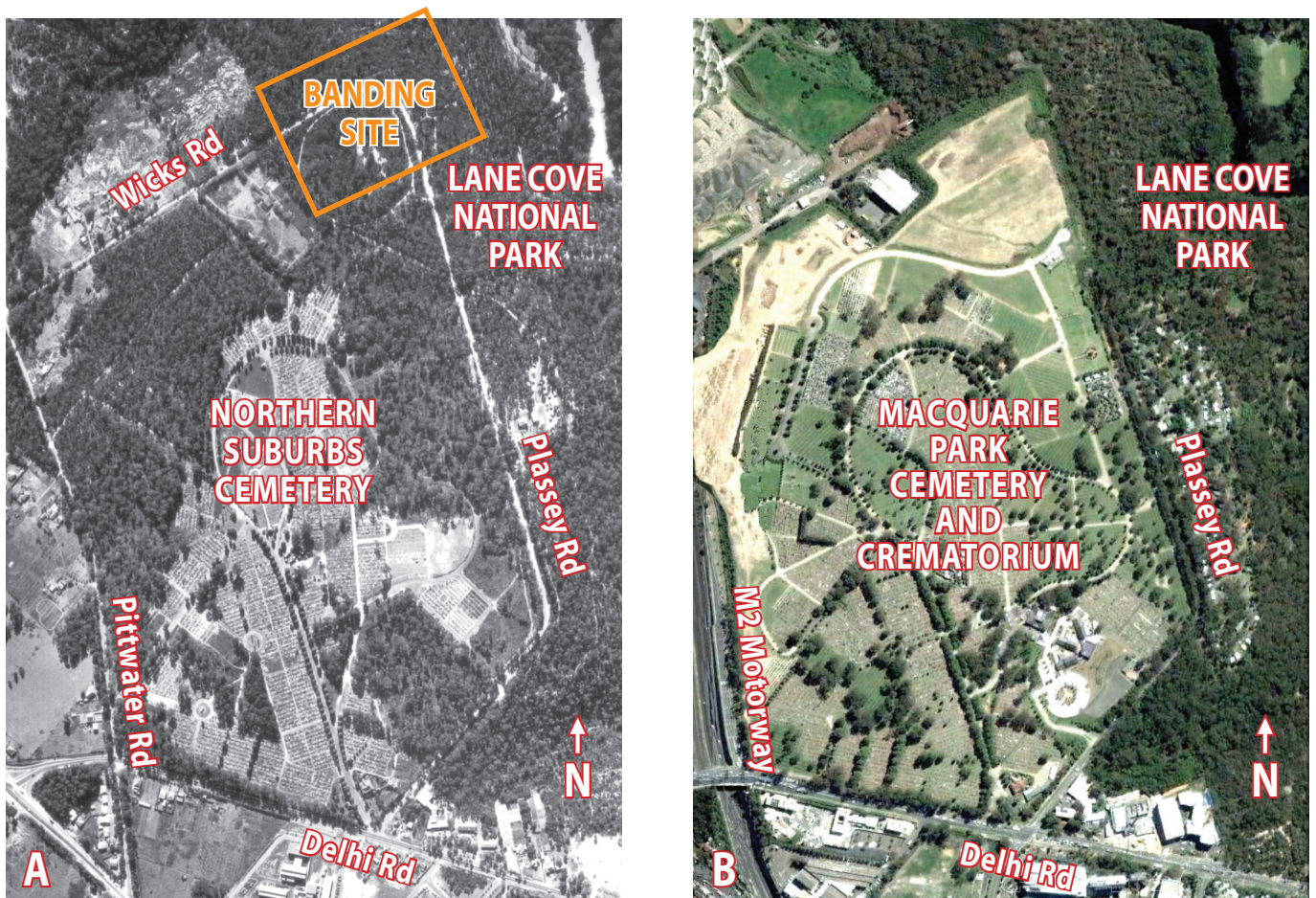


Figure 1. (A Left) Air photograph of North Ryde banding site adjacent to the now Macquarie Park Cemetery and Crematorium and Lane Cove National Park, 1961. Image courtesy of Department of Land Management, Bathurst.

(B Right) Satellite image of North Ryde banding site showing recent developments 2007.

Image courtesy of Google Earth.

in Table 1. Of all birds banded 80.5 per cent were Silvereyes or honeyeaters.

A number of the regularly caught species were slow to return to the site after the 1964 fire in November. These included the White-browed Scrubwren (absent for 13 months), Striated Thornbill (20 months), Brown Thornbill (17 months), Eastern Whipbird (64 months), Golden Whistler (56 months), Rufous Whistler (48 months), Grey Fantail (41 months), and Double-barred Finch (64 months).

Little Wattlebird

Two hundred Little Wattlebirds were banded with a recapture rate of 16 per cent. Fifteen control recoveries, with a maximum distance travelled of six kilometres, were recorded – eleven were recovered dead and seven of these eleven were reported as being ‘killed by cat’.

Rufous and Golden Whistler

Ninety Rufous Whistlers were banded with 22 (24.4%) being recaptured 48 times with the maximum time between banding and recapture being 11 years 3 months. The capture

ratio of Rufous Whistlers to Golden Whistlers at North Ryde was 90/48. This is extremely high compared with results obtained from a similar 21-year banding study near Campbelltown, NSW (Leishman 2000), where the ratio was 88/240. In the lower Blue Mountains at Blue Gum Swamp Creek a ratio of 9/118 was recorded (Hardy and Farrell 1990) and at Mount Annan Botanic Gardens, Campbelltown in a 25-year study the ratio was 84/306 (unpub. data).

Grey Shrike-thrush

Fifty-one Grey Shrike-thrush were banded with 16 (31.4%) being recaptured 25 times. These numbers are high when compared with results obtained from a similar 21-year banding study near Campbelltown, NSW where 24 Grey Shrike-thrush were banded with 10 (42%) recaptured 21 times (Leishman 1994). In the lower Blue Mountains at Blue Gum Swamp Creek over a ten-year period 19 Grey Shrike Thrush were banded with 5 (26%) were recaptured 11 times (Hardy and Farrell 1990). and at Mount Annan Botanic Gardens, Campbelltown in a 25-year study the number banded was 18 with 5 (28%) birds recaptured 9 times (unpub. data).

TABLE 1

North Ryde banding and recovery data, 1959 to 1982

SPECIES		No. banded	No. recaptured	No. times retrapped	Retrap (%)	Longevity (months)	Controls	Max. distance (km)	Capture rate 1962-1982 *
Spotted Dove	<i>Streptopelia chinensis</i>	15	1	1	6.7	1			0.005
Brown Goshawk	<i>Accipiter fasciatus</i>	2	0	0					0.002
Painted Button-quail	<i>Turnix varius</i>	5	0	0					0.004
Eastern Rosella	<i>Platycercus eximius</i>	1	0	0					0.001
Horsfield's Bronze-Cuckoo	<i>Chalcites basalus</i>	3	0	0					0.002
Shining Bronze-Cuckoo	<i>Chalcites lucidus</i>	10	0	0					0.007
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>	23	2	2	8.7				0.019
Southern Boobook	<i>Ninox novaeseelandiae</i>	1	0	0		3	1	2	0.001
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	19	2	2	10.5				0.018
Sacred Kingfisher	<i>Todiramphus sanctus</i>	3	0	0					0.003
White-throated Treecreeper	<i>Cormobates leucophaeus</i>	19	2	3	10.5	10			0.019
Superb Fairy-wren	<i>Malurus cyaneus</i>	201	100	246	49.8	106			0.365
Variagated Fairy-wren	<i>Malurus lamberti</i>	49	10	16	20.4	67			0.054
White-browed Scrubwren	<i>Sericornis frontalis</i>	133	71	208	53.4	111			0.283
Striated Thornbill	<i>Acanthiza lineata</i>	26	11	29	42.3	101			0.045
Yellow Thornbill	<i>Acanthiza nana</i>	23	3	4	13	136			0.023
Brown Thornbill	<i>Acanthiza pusilla</i>	48	21	41	43.8	126			0.071
Spotted Pardalote	<i>Pardalotus punctatus</i>	21	2	3	9.5	23			0.019
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	953	251	595	26.3	158	14	8	1.228
Lewin's Honeyeater	<i>Meliphaga lewinii</i>	5	2	3	40	11			0.007
Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>	759	114	157	15	129	1	15.7	0.699
White-eared Honeyeater	<i>Lichenostomus leucotis</i>	8	1	1	12.5				0.004
Yellow-tufted Honeyeater	<i>Lichenostomus melanops</i>	122	40	81	32.8	57	2	1.6	0.171
Fuscous Honeyeater	<i>Lichenostomus fuscus</i>	4	1	1	25				0.004
White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>	6	1	1	16.7		1	2.9	0.006
Little Wattlebird	<i>Anthochaera chrysoptera</i>	200	32	47	16	130	15	6	0.201
Regent Honeyeater	<i>Anthochaera phrygia</i>	1	0	0					0.001
Red Wattlebird	<i>Anthochaera carunculata</i>	12	0	0		31	1	3	0.008
Scarlet Honeyeater	<i>Myzomela sanguinolenta</i>	1	1	1	100				0.002
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	735	259	529	35.2	135	6	3.2	0.943
White-cheeked Honeyeater	<i>Phylidonyris niger</i>	220	34	44	15.5	32	1	3.2	0.219
Brown-headed Honeyeater	<i>Melithreptus brevirostris</i>	6	2	2	33.3				0.002
White-naped Honeyeater	<i>Melithreptus lunatus</i>	519	103	129	19.8	82	3	15	0.535
Eastern Whipbird	<i>Psophodes olivaceus</i>	16	3	3	18.8	7			0.016
Varied Sittella	<i>Daphoenositta chrysoptera</i>	2	0	0					0.002
Crested Shrike-tit	<i>Falcunculus frontatus</i>	18	4	4	22.2	17			0.017
Golden Whistler	<i>Pachycephala pectoralis</i>	48	7	7	14.6	25			0.044
Rufous Whistler	<i>Pachycephala rufiventris</i>	90	22	48	24.4	135			0.108
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	51	16	25	31.4	94	2	1.6	0.054
Olive-backed Oriole	<i>Oriolus sagittatus</i>	6	1	1	16.7				0.006
Dusky Woodswallow	<i>Artamus cyanopterus</i>	4	0	0					0.003
Grey Butcherbird	<i>Cracticus torquatus</i>	3	0	0					0.003
Australian Magpie	<i>Cracticus tibicen</i>	12	0	0		18	1	1.6	0.010
Pied Currawong	<i>Strepera graculina</i>	6	1	1	16.7				0.006
Rufous Fantail	<i>Rhipidura rufifrons</i>	17	0	0					0.014
Grey Fantail	<i>Rhipidura albiscapa</i>	48	2	2	4.2	3			0.041
Willie Wagtail	<i>Rhipidura leucophrys</i>	4	0	0					0.003
Leadon Flycatcher	<i>Myiagra rubecula</i>	3	0	0					0.002
Satin Flycatcher	<i>Myiagra cyanoleuca</i>	1	0	0					0.001
Black-faced Monarch	<i>Monarcha melanopsis</i>	7	0	0					0.006
Magpie-lark	<i>Grallina cyanoleuca</i>	2	0	0					0.002
Jacky Winter	<i>Microeca fascinans</i>	2	0	0					0.002
Rose Robin	<i>Petroica rosea</i>	6	0	0					0.005
Eastern Yellow Robin	<i>Eopsaltria australis</i>	236	112	326	47.5	140			0.435
Silvereye	<i>Zosterops lateralis</i>	5425	865	1405	15.9	108	39	1030	4.737
Welcome Swallow	<i>Hirundo neoxena</i>	2	0	0					0.002
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	180	27	34	15	133	3	3.2	0.130
Common Starling	<i>Sturnis vulgaris</i>	2	0	0					0.002
Common Blackbird	<i>Turdus merula</i>	2	1	1	50				0.003
Mistletoebird	<i>Dicaeum hirundinaceum</i>	2	0	0					0.001
Double-barred Finch	<i>Taeniopygia bichenovii</i>	75	0	0					0.051
Red-browed Finch	<i>Neochmia temporalis</i>	600	112	164	18.7	50	2	0.75	0.625
Nutmeg Mannikin	<i>Lonchura punctulata</i>	2	0	0					0.002
House Sparrow	<i>Passer domesticus</i>	78	14	17	17.9	34			0.060
European Goldfinch	<i>Carduelis carduelis</i>	15	0	0					0.008
TOTALS		10996	2253	4184	20.5				11.367

* No net numbers or hour data were available for the years 1959 to 1961 to calculate capture rates



Figure 2. North Ryde banding site habitat, showing Bill Lane setting up a mist net adjacent to flowering *Banksia ericifolia*. April, 1978.

Silvereyes

Five thousand, four hundred and twenty nine Silvereyes were banded during this study, 865 of the banded birds were recaptured (15.9%) 1405 times. Silvereye captures accounted for 49.3% of the total birds banded. The largest catches per year were 724 birds in 1963 and 650 birds in 1972 (Fig. 3). Captures of Silvereyes were highest during the flowering of *Banksia ericifolia* in May to August (Fig. 4).

Capture rates show a decline from very high in 1965 to low rates towards the end of the study (Fig. 5). This peak in 1965 which is nearly three times that of the next highest year (1963) is difficult to explain. This was the year after the bush fire in 1964. There were only 10 banding visits carried out from June to September during the major influx of Silvereyes. There were only a small number of nets used during this time (2.8 nets per visit) with a total capture of 395 Silvereyes. It is possible that there was a patch of *Banksia ericifolia* nearby that had not been burnt by the fire and this was attracting a large number of Silvereyes into a small area but information regarding this was not recorded. There were no banding visits during 1965 outside this period.

Thirty-nine control recoveries were recorded either from North Ryde to other sites or from other sites to North Ryde. These control recoveries were published up to 1962 (Lane 1962). Local recovery distances away from the banding site ranged from 1.6 kilometres to 19.3 kilometres. Three long-distance recoveries were recorded: 010-10425 banded at North Ryde and recovered dead at Rosebery, Tas. 1030 kilometres SSW; 011-76119 banded at North Ryde and recovered dead at Pomonal, near Ararat, Vic. 830 kilometres WSW; and, 012-61163 banded at Somers, Vic. and recovered at North Ryde, NSW, 630 kilometres NE (Anon 1954, 1974, 1975).

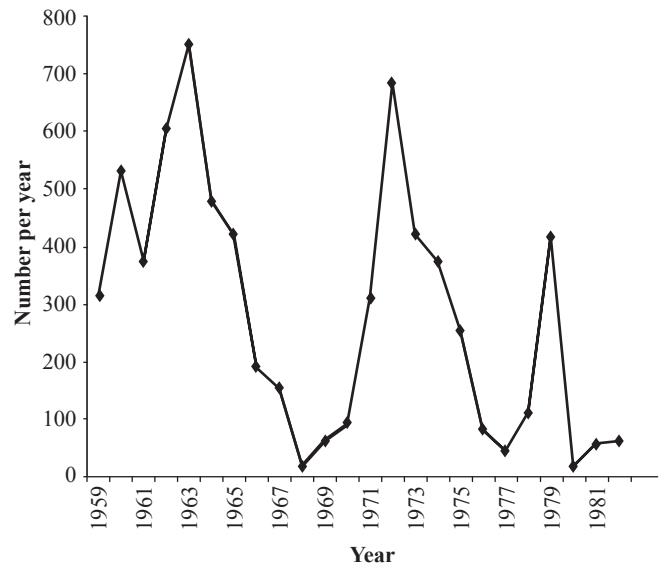


Figure 3. Silvereye captures at North Ryde by year, 1959–1982.

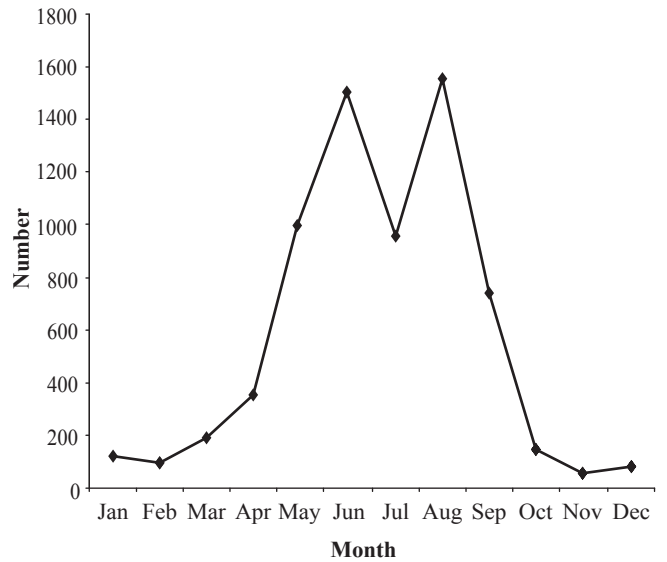


Figure 4. Silvereye captures at North Ryde by month.

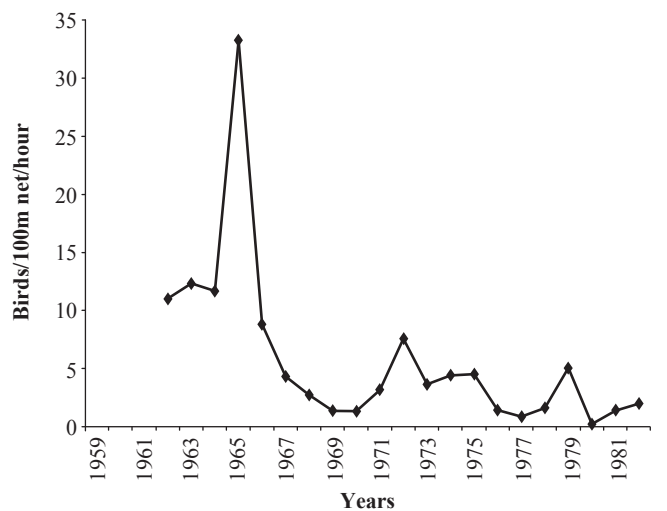


Figure 5. Silvereye capture rates (birds/100m net/hour) at North Ryde, 1962–1982.

Papers previously published by Bill from this banding project

- Lane, S.G. (1962). Silveryeye recoveries in the Sydney district of N.S.W. *The Bird Bander* **1**: 29–33.
- Lane, S.G. (1962). Little Wattle-bird wanderings. *The Bird Bander*. **1**: 38.
- Lane, S.G. (1964). Banding Eastern Spinebills. *The Australian Bird Bander* **2**: 8–11.
- Lane, S.G. (1973). Little Wattle-bird banding at North Ryde, New South Wales. *The Australian Bird Bander*. **11**: 78–80.
- Lane, S.G. (1976). Results from banding Southern Yellow Robins. *The Australian Bird Bander* **14**: 63–66.

ACKNOWLEDGEMENTS

Other banders and helpers who participated in this study were:

B. Baker, H. Battam, G.T. Bush, A. Cam, G.R. Cam, C.B. Campion, G.P. Clancy, A. Cramer-Roberts, H.J. de S. Disney, G. Elliott, L. W. Filewood, J.W. Hardy, E.S. Hoskins, T.H. Hughes, M.A. Johnson, L. Lane, S.G. Lane, D. Larkins, A.J. Leishman, G.A. Lenehan, T.R. Lindsey, G. Logan, R.G. Lonnon, J. McCrea, G. Millard, A.K. Morris, A.Y. Norris, J. Rawlins, N.W. Sheppard, D.I. Smedley, D. Stewart, N.M. Swanson and I.M. Usterberg,

Acknowledgement must be given to the late S.G. (Bill) Lane for use of his banding data, various papers, notes, and maps from the North Ryde banding site which were used in the compilation of this paper. I would like to thank G. Fry, J. Hardy and J. Farrell for assistance with this paper. Bands and data recording were provided by the Secretary, Australian Bird and Bat Banding Schemes, Canberra, ACT. Assistance of the Banding Office is also acknowledged.

REFERENCES

- Anon (1959). Recovery Round-up. *Bird Bander* **1**: 72.
- Anon (1974). Recovery Round-up. *Australian Bird Bander* **12**: 84.
- Anon (1975). Recovery Round-up. *Australian Bird Bander* **14**: 79.
- Benson, D and Howell J. (1990). 'Taken for Granted: The Bushland of Sydney and its Suburbs'. (Kangaroo Press: Sydney.)
- Bradstock, R. A. and O'Connell, M. A. (1988). Demography of woody plants in relation to fire: *Banksia ericifolia* L.f. and *Petrophile pulchella* (Schrad) R. Br. *Austral Ecology* **13**: 505–518.
- Christidis, L. and Boles, W. (2008). 'Systematics and Taxonomy of Australian Birds'. (CSIRO Publishing: Collingwood.)
- Clarke, P. J. and Benson, D. H. (1987). 'Vegetation survey of Lane Cove River State Recreation Area'. (Royal Botanic Gardens: Sydney.)
- Hardy, J. W. and Farrell, J. R. (1990). A bird banding study in the Blue Mountains, New South Wales: 1 Overview. *Corella* **14**: 1–15.
- Hitchcock, W. B. and Carrick, R. (1960). Fifth annual report of the Australian Bird-banding Scheme, July 1958 to June 1959. *C.S.I.R.O. Wildlife Research* **5**: 52–84.
- Lane, S. G. (1962). Silveryeye recoveries in the Sydney district of N.S.W. *The Bird Bander* **1**: 29–33.
- Leishman, A.J. (1994) The birds of Humewood/Beulah forest, Campbelltown, NSW. *Aust Birds* **28**: 14-26.
- Leishman, A. J. (2000). A long-term banding study in a Spotted Gum forest near Campbelltown, New South Wales. *Corella* **24**: 6–12.

Editor's Note: *This report highlights Bill's research endeavours at North Ryde. Data from other sites still remain unpublished.*