

# Bird ringing in the Free State National Botanical Gardens, Bloemfontein, with notes on recaptures

**D. H. de Swardt<sup>1</sup>, G. P. J. Grobler<sup>2</sup> & H. D. Oschadleus<sup>3</sup>**

<sup>1</sup> Department of Ornithology, Box 266, National Museum, Bloemfontein 9300

<sup>2</sup> 3 Sugar Brook Court, Bromsgrove, B60 3EX, England

<sup>3</sup> Avian Demography Unit, University of Cape Town, Rondebosch 7700

Email: dawie@nasmus.co.za

Previous studies on birds in the greater Bloemfontein area include checklists and surveys such as those carried out at the King's Park and Zoological Gardens, the Bloemspruit area, the sewage dams at Ooseinde and Bloemspruit and also at the Franklin Nature Reserve in the central parts of the city (Kopij 1997, 1999, 2002; Kopij & de Swardt 1998). Kopij (2001) also published an atlas of the birds of the Bloemfontein area, including the Free State National Botanical Gardens (hereafter referred as FSNBG). Ringing studies have been carried out in central Bloemfontein at Oliewenhuis Art Museum, with fewer ringing sessions carried out at various other localities in and around Bloemfontein (de Swardt 1992; unpubl. data). The FSNBG, on the northern outskirts of Bloemfontein, was the venue for considerable ringing activities undertaken by several ringers of the Free State Bird Club since 1985. A study on Malachite Sunbirds *Nectarinia famosa* was initiated by Dawie de Swardt in 1990 to study the seasonal movements of this species, with individuals present in *Leonotis* clumps in the FSNBG between March and May each year (de Swardt 1995a, 2001). Kok (1996) carried out an avifaunal survey of the birds of FSNBG and listed 122 species for the Gardens. The aim of this note is to summarize the bird species ringed and recaptured over a period of 20 years at the

FSNBG.

Kok (1996) provides a short description of the different habitats at FSNBG. The gardens can be divided into lower-lying cultivated areas with grassy lawns and clumps of indigenous tree species such as *Rhus lancea* and *Olea europea* subsp. *africana*, and indigenous vegetation of the more hilly areas. The cultivated areas are supplemented by a variety of ground cover and other plant species, interspersed with tree clumps, with species representing the different regions of the Free State. One such area includes the *Leonotis leonurus* plants where most of the ringing of Malachite and White-bellied Sunbirds *Cinnyris talatala* has been done. The hilly area is dominated by *Olea* spp., *Cussonia paniculata* and other trees typical of central Free State. Small populations of *Aloe granidentata* that dominate the open grassy flower from July to September, attracting both Malachite and White-bellied Sunbirds. A stream, dammed in two places, separates the two main areas of the Gardens.

Between August 1985 and April 2004, 1311 birds of 50 species were ringed at the FSNBG (Table 1). The most frequently captured species were Orange River White-eye *Zosterops pallidus* (26.5 %), Red Bishop *Euplectes orix* (14.0 %), Malachite Sunbird (11.2 %), Karoo Thrush *Turdus smithii* (11.0 %), Red

eyed Bulbul *Pycnonotus nigricans* (4.8 %) and Laughing Dove *Streptopelia senegalensis* (4.5 %). Other interesting captures of species seldomly encountered at the Gardens include Black-crowned Night Heron *Nycticorax nycticorax*, Malacite Kingfisher *Alcedo cristata*, White-throated Canary *Serinus albogularis* and Golden-breasted Bunting *Emberiza flaviventris*. Species such as Karoo Robin *Cercotrichas coryphaeus*, Grey-backed Cisticola *Cisticola subruficapilla*, Fairy Flycatcher *Stenostira scita* and Layard's Titbabbler *Parisoma layardi* were captured mainly in the hilly areas.

A total of 130 recaptures of individuals of 21 species were recorded (see Table 1). Some of these, however, were recaptured during more than one ringing session. The highest recapture rates were recorded for Red-eyed Bulbul (21.9 %), Karoo Thrush (20.7 %) and Cape Robin *Cossypha caffra* (23.5 %). Although high numbers of Malachite Sunbirds and Orange River White-eyes were caught, these species had the lowest recapture rates of 10.9 % and 8.6 % respectively. Table 2 lists 37 birds recaptured after a period longer than 24 months. The remaining 93 recaptures showed elapsed times of less than 24 months (range 1-10 months). The mean elapsed time between ringing and recapture for the 37 recaptures mentioned above was 51.8 months. An overall recapture rate of 9.9 % was obtained at FSNBG; this is slightly higher than the 7.1% obtained at the Oliewenhuis Art Museum gardens (de Swardt 1995b). Some interesting and particularly noteworthy recaptures at the FSNBG will be discussed in more detail.

Since 1990, Malachite Sunbirds were ringed regularly at the *Leonotus* clump during April – May, with a total of 147 sunbirds ringed during this period (de Swardt 1995a). On 22 April 2003 a sunbird (ring no. F31781) was recaptured after a period of 120 months (10 years); this individual was the second oldest Malachite

Sunbird recaptured in South Africa. This bird was also captured at least five times in previous seasons at the same *Leonotus* clump (Oschadleus & de Swardt 2003). On 19 May 2004 a female (ring no. AD85601) was recaptured at the same site, 9 years after initial capture and ringing. Malachite Sunbirds are also known to disperse widely in the Free State, moving in relation to the availability of nectar resources (de Swardt 2001). One individual (ring no. F20581), ringed at the FSNB during April 1991, was recaptured 27 months later during August 1993 in the suburb of Heuwelsig, four kilometres away. From recapture data for these three individuals, it may be speculated that birds spend the April – May *Leonotis* flowering period in the FSNBG area, before starting to move to suburban areas and surrounding hillsides where other nectar resources such as aloe species and other nectar bearing plants start flowering from late May (de Swardt 2001; unpubl.data).

Of the 55 White-bellied Sunbirds ringed in the gardens during the past fourteen years, no recaptures were recorded in subsequent seasons up to March 2004. On 7 April 2004 however, the first individual was recaptured - a male (ring no. W23696), ringed nearly a year previously, on 22 April 2003 at the same site. White-bellied Sunbirds have been observed during all months in the greater Bloemfontein area, but individuals probably move from hilly areas to the FSNBG during winter, when more nectar-bearing plants are available in the Gardens (unpubl. data).

Another interesting control was that of a Fiscal Shrike *Lanus collaris* (ring no. BB73315) ringed by Deon du Plessis on 18 February 1989 and recaptured in the same area on 1 September 2000 (12 years and 7 months later). This represents the greatest longevity record for this species (Oschadleus 2003). Karoo Thrushes also give interesting recapture data: of the 145 ringed so far, 30 have

been recaptured, of which only two were recaptured outside the borders of the FSNBG. One (ring no. 4H01944) was recaptured in a weak state (and later died) in the suburb of Langenhovenpark (6 km southwest) and the other (ring no. 4H01385) was recaptured in the suburb of Bayswater (4 km southeast) (Table 2). Two recaptures were more than eight years after ringing, while some recaptures were less than one month. The mean time elapsed in recaptures for this species was 23.3 months. Twelve Cape Robins were recaptured, with the longest time lapse between ringing and recapture being 84 months (ring no. BB97802). Craig & Hulley (1996) studied Olive Thrush *T. olivaceus* and Cape Robin movements in the Grahamstown area based on ringing results. They regarded Olive Thrushes as birds having higher mortality rates and being more nomadic, dispersing away from ringing sites, than Cape Robins, which appeared to be resident. The interval between ringing and recapture of Karoo Thrushes (16.0 months) and Cape Robins (22.4 months) at the FSNBG was similar for Olive Thrushes and Cape Robins (2.7 and 12.1 months respectively) found in the Eastern Cape (Craig & Hulley 1996). The recovery of Karoo Thrushes outside the borders of the FSNBG, while Cape Robins were resident in the FSNBG tend to support the findings of Craig & Hulley (1996).

## References

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**Table 1.** Bird species ringed at the Free State National Botanical Gardens between August 1985 and April 2004.

<b>SAFRING number</b>	<b>Species</b>	<b>Ringed</b>	<b>Recapture</b>	<b>Rec. Rate</b>
69	Black-crowned Night Heron	1		
212	Red-knobbed Coot	1		
245	Blacksmith Plover	1		
311	Rock Pigeon	4	1	25.0
316	Cape Turtle Dove	42	1	2.4
317	Laughing Dove	59	3	5.1
391	White-backed Mousebird	15	3	20.0
392	Red-faced Mousebird	6	1	16.6
397	Malachite Kingfisher	3		
418	Hoopoe	2	2	100.0
421	Scimitarbill	1	1	100.0
432	African Pied Barbet	2		
439	Crested Barbet	12	1	8.3
442	Lesser Honeyguide	6	1	20.0
514	Ashy Tit	2		
544	Red-eyed Bulbul	64	14	21.9
553	Karoo Thrush	145	30	20.7
581	Cape Robin	51	12	23.5
583	Karoo Robin	1		
599	Willow Warbler	2		
621	Long-billed Crombec	1		
637	Neddicky	7		
638	Grey-backed Cisticola	1		
646	Levaillant's Cisticola	1		
650	Black-chested Prinia	22		
654	Spotted Flycatcher	1		
658	Chesnut-vented Titbabbler	7	4	57.1
659	Layards Titbabbler	3		
665	Fiscal Flycatcher	10		
678	Fairy Flycatcher	6		
686	Cape Wagtail	4		
707	Fiscal Shrike	8	2	25.0
714	Three-streaked Tchagra	1		
722	Bokmakierie	3		
735	Wattled Starling	2	1	50.0
751	Malachite Sunbird	147	16	10.9
763	White-bellied Sunbird	55	1	1.8
775	Orange River White-eye	347	30	8.6
784	House Sparrow	4	1	25.0
786	Cape Sparrow	15	1	6.6
803	Southern Masked Weaver	13		
805	Red-billed Quelea	32		
808	Southern Red Bishop	183	4	2.2
820	Redheaded Finch	6		
837	Red-billed Firefinch	2		
843	Common Waxbill	2		
860	Black-throated Canary	1		
865	White-throated Canary	2		
866	Yellow Canary	4		
874	Golden-breasted Bunting	1		
<b>TOTAL</b>		<b>1311</b>	<b>130</b>	<b>9.9</b>

**Table 2.** Selected recapture data for birds ringed at the Free State National Botanical Gardens between August 1985 and April 2004 after an elapsed period of 24 months or more.

Ring	Species	Ring date	Ring Locality	Recapture Date	Recapture Locality	Months	Distance (km)
621272	Pigeon	14/06/97	Botanical Gardens	21/08/99	Botanical Gardens	26	
CC28998	White-backed Mousebird	12/03/98	Botanical Gardens	19/08/00	Botanical Gardens	29	
CC18799	Scimitarbill	22/03/90	Botanical Gardens	26/04/00	Botanical Gardens	47	
4H07242	Crested Barbet	15/05/98	Botanical Gardens	20/09/01	Botanical Gardens	40	
BD68287	Red-eyed Bulbul	15/05/99	Botanical Gardens	14/05/03	Botanical Gardens	48	
BD42335	Red-eyed Bulbul	11/10/96	Botanical Gardens	01/01/02	Botanical Gardens	51	
CC14379	Karoo Thrush	14/10/95	Botanical Gardens	21/03/98	Botanical Gardens	29	
495234	Karoo Thrush	20/04/93	Botanical Gardens	14/10/95	Botanical Gardens	30	
453975	Karoo Thrush	08/10/95	Botanical Gardens	15/06/99	Botanical Gardens	44	
4A07303	Karoo Thrush	07/10/95	Botanical Gardens	22/03/02	Botanical Gardens	77	
CC14340	Karoo Thrush	23/05/95	Botanical Gardens	17/07/99	Botanical Gardens	47	
CC22420	Karoo Thrush	15/11/96	Botanical Gardens	19/08/00	Botanical Gardens	45	
4H01944	Karoo Thrush	26/04/97	Botanical Gardens	27/11/01	Langenhovenpark	55	6
4H01385	Karoo Thrush	10/05/97	Botanical Gardens	20/04/02	Bayswater	59	4
CC14378	Karoo Thrush	13/11/94	Botanical Gardens	19/05/04	Botanical Gardens	102	0
CC18526	Karoo Thrush	17/11/95	Botanical Gardens	22/04/04	Botanical Gardens	101	
BB97802	Cape Robin	13/07/89	Botanical Gardens	13/07/96	Botanical Gardens	84	
BB97959	Cape Robin	15/07/93	Botanical Gardens	17/08/96	Botanical Gardens	37	
F23326	Cape Robin	08/06/96	Botanical Gardens	15/06/99	Botanical Gardens	36	
BD54603	Cape Robin	20/09/01	Botanical Gardens	06/04/04	Botanical Gardens	30	
BD75864	Cape Robin	19/08/00	Botanical Gardens	22/04/04	Botanical Gardens	44	
BD54603	Cape Robin	20/09/01	Botanical Gardens	20/05/04	Botanical Gardens	32	
F82610	Cape Robin	19/06/99	Botanical Gardens	20/05/04	Botanical Gardens	59	
F31618	Titbabbler	15/07/93	Botanical Gardens	08/06/96	Botanical Gardens	35	
BB73315	Fiscal Shrike	18/02/89	Botanical Gardens	20/09/01	Botanical Gardens	151	
4A15815	Fiscal Shrike	10/04/02	Botanical Gardens	06/04/04	Botanical Gardens	24	

Ring	Species	Ring date	Ring Locality	Recapture Date	Recapture Locality	Months Distance (km)
AB81131	Malachite Sunbird	08/05/90	Botanical Gardens	21/04/93	Botanical Gardens	36
F31656	Malachite Sunbird	21/04/94	Botanical Gardens	08/05/97	Botanical Gardens	36
F31781	Malachite Sunbird	19/04/93	Botanical Gardens	22/04/03	Botanical Gardens	120
AD85601	Malachite Sunbird	11/04/95	Botanical Gardens	19/05/04	Botanical Gardens	109
F20581	Malachite Sunbird	07/05/91	Botanical Gardens	19/08/93	Heuwelsig	27
AB81129	Malachite Sunbird	08/05/90	Botanical Gardens	18/05/92	Botanical Gardens	24
AE39117	Orange River White-eye	11/10/96	Botanical Gardens	26/04/99	Botanical Gardens	30
X67355	Orange River White-eye	18/05/91	Botanical Gardens	21/04/94	Botanical Gardens	35
W02635	Orange River White-eye	02/05/95	Botanical Gardens	15/05/99	Botanical Gardens	48
W09117	Orange River White-eye	08/10/95	Botanical Gardens	15/05/99	Botanical Gardens	43
W05852	Orange River White-eye	08/10/95	Botanical Gardens	21/08/99	Botanical Gardens	46
Mean months elapsed (n=37)						51.8