

African Reed Warblers *Acrocephalus baeticatus* in Botswana

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Introduction

Three species of 'swamp' warbler are resident or partial migrants in south-east Botswana – African Reed (Marsh) Warbler *Acrocephalus baeticatus*, Lesser Swamp (Cape Reed) Warbler *A. gracilirostris* and Little Rush (African Sedge) Warbler *Bradypterus baboecala*. These three species are endemic and widespread in Africa and all are frequent to common at wetlands in southern Africa; in Botswana they are all common to locally abundant in the northern wetlands of the Okavango Delta and Chobe/Linyanti system but they also occur in the northern Makgadikgadi Pans at Nata and in the east in the Limpopo drainage (Barnes 1997, Barnes & Herremans 1997, Harrison 1997, Penry 1994, Urban *et al.* 1997).

In southern Africa the African Reed Warbler is predominantly resident in the north but largely migratory in the south, birds leaving the western Cape at the end of February. The species uses any wetland with associated emergent vegetation, even small patches of such vegetation at farm dams (Harrison 1997). In south-east Botswana African Reed Warblers are found at dams and sewage lagoons, where they breed from November to March (Skinner 1983, pers. obs.). One large area of sewage ponds (S.P.) constructed in 1990 at Phakalane, 15 km north of Gaborone, is now a regular haunt of African Reed Warblers and the other two resident species (Tyler & Tyler 1997a). A study of warblers was carried out at this site (Phakalane S.P.) from July 1996 to the end of November 2000 and some

data on Palaearctic species at this site have been published elsewhere (Tyler *et al.* 1997, Tyler & Tyler 1997a, b, Tyler 1998, 2000). This paper looks only at African Reed Warblers. The aims of the study included an investigation of (a) the size of the population relative to that of other warblers, (b) biometrics, (c) seasonal occurrence and (d) the use made by African Reed Warblers of the swamp and adjacent drier habitats. A further question was whether any wintering African Reed Warblers were part of the summer population or whether these were winter migrants from further south.

Study area and methods

The site which is described elsewhere (Tyler & Bishop 1998, Tyler 2001), comprises four open water lagoons with fringes and more extensive areas of emergent vegetation, notably reed-mace *Typha capensis*, and remnants of *Acacia* savanna and woodland. From July 1996 to March 2001 trapping was carried out at four different locations at Phakalane S. P. Prior to 1997, netting sessions were sporadic. From January 1997 to March 1999 and from late January to November 2000 intervals between trapping sessions varied from one to four weeks. Trapping was, however, more frequent in the summer months. There was a long gap in ringing effort from April 1999 to December 1999 inclusive. This was because the pumps, which fill the lagoons, failed and the lagoons largely dried out. The reed-mace beds and fringes became severely degraded by cattle and were then destroyed by burning. Once the pumps were repaired, the lagoons

filled and the reed-mace beds soon recovered during the late summer of 1999/2000. No ringing was carried out in December 2000 and January 2001, whilst in February and March 2001 there were two and four sessions respectively. Some casual ringing was also carried out at the site in December 2002 and in February 2003.

For each ringing session at a site, three to seven nets (one 12 m net and the rest 18m long), but usually four or five nets were erected either at 15h30-16h00 (earlier in the winter) or at dawn, within and at the edge of stands of *Typha*. The nets were then in operation until after dusk or for 2-3 hrs after dawn. Sometimes nets were left furled overnight and netting re-commenced in the morning (counted as 2 sessions). The net location and position of each bird trapped was noted. The wing length of each bird was measured (maximum flattened chord) to the nearest 0.1

mm and weight was measured using a Pesola balance, to the nearest 0.1 g. Moulting scores were taken of any bird that showed signs of primary (or secondary) moult.

Results

Abundance

From July 1996 to March 2001, 1765 *Acrocephalus* and *Bradypterus* warblers were ringed. Of the total catch of these warblers, 60.3% were African birds and the rest palaeartic migrants. African Reed Warblers were the most numerous species (n=863), forming 48.9% of the total catch and 81% of the three target African species (Table 1).

There was markedly more ringing effort during the summer months but when the mean number of birds, both new and re-traps, caught per ringing session was calculated, African Reed Warblers were decidedly more

Table 1. Numbers of three species of African warblers and of palaeartic migrant warblers (species combined) caught in three-monthly periods from July 1996 to November 2000. Note that totals exclude re-traps and therefore under-represent numbers caught.

Period	<i>A. baeticatus</i>	<i>A. gracilirostris</i>	<i>B. baboecala</i>	Palaeartic migrants	TOTAL
May-Jul 1996	3	0	0	0	3
Aug-Oct 1996	9	1	0	0	10
Nov-Jan 1996/97	124	9	0	150	283
Feb-Apr 1997	113	11	2	182	308
May-Jul 1997	8	3	0	0	11
Aug-Oct 1997	38	8	0	2	48
Nov-Jan 1997/98	128	14	3	95	240
Feb-Apr 1998	131	12	1	130	274
May-Jul 1998	8	9	0	0	17
Aug-Oct 1998	36	12	1	0	49
Nov-Jan 1998/99	55	26	1	68	150
Feb-Apr 1999	36	3	0	22	61
May-Jul 1999	1	1	1	0	3
Aug-Oct 1999	0	0	0	0	0
Nov-Jan 1999/00	3	0	0	3	6
Feb-Apr 2000	19	3	0	18	40
May-Jul 2000	16	9	0	0	25
Aug-Oct 2000	36	24	0	0	60
Nov-Jan 2000/01	29	28	0	5	62
Feb-Apr 2001	70	20	0	25	115
TOTAL	863	193	9	700	1765

abundant in the summer months with a mean of 10-15 birds per session (maximum of 21-31) between October and March, compared with two to five birds per session (max. 4 to 9) in the winter from May to August. Many of the summer birds were juveniles but these did not solely account for the higher summer numbers. April and September catches were intermediate with means of six birds (max 10 and 11 respectively). The mean number per ringing session is, however, a crude estimate of abundance because a dusk session is given equal weight to a dawn session and no allowance is taken for weather or numbers of nets in use. The latter was difficult to assess because in busy periods and especially when large numbers of Red-billed Quelea *Quelea quelea* and/or Red Bishops *Euplectes orix* were coming in to roost, some nets would be quickly furled and be temporarily out of use.

African Reed Warblers were caught in nets within the *Typha* beds where they sometimes foraged, and between these reed-mace beds and *Acacia* thickets where during the late morning and afternoon they foraged in trees in the manner of Willow Warblers *Phylloscopus trochilus*, both foliage gleaning and jumping up from twigs to catch insects.

Biometrics

Mean wing length of African Reed Warblers caught at Phakalane was 59.2 mm (SD = 1.74, range 52-66, n = 857). Mean weight was 10.1g (SD = 0.95, range 7.5-14.5, n = 830).

While the majority of African Reed Warblers weighed less than 11.5g, 47 birds were caught that were >12g. Apart from one of 13.3g caught in September and two, of 12.4

and 14.5g, in November, all other heavy birds were caught between mid-March and 19 April.

Moult

Active moult of primary feathers was recorded only between March and June (Table 2), except for one bird that had just started moult in late February. Of 284 birds (adults and immatures) caught from March to June, only 36 (13%) were in primary moult; between 60-80% of the birds caught were immatures. Of known adults in March 2000 and March 2001, 36.8% were in active primary moult. In April, 15% of adults were moulting. In May 2000, five of eight birds (all ages) were in active moult and two had fresh plumage. In June 2000, five of eight birds (all ages) had fresh plumage, but one adult had very old worn plumage except for a replaced innermost primary, and two others were in active moult.

One bird (ring number AE44621), with a moult score of 4 on 8 March 1997 had a score of 17 when re-trapped on 5 April 1997, suggesting a prolonged moult of 100 days or more. In June, one bird showed interrupted or suspended moult. Another showed interrupted moult in early August.

Site fidelity and longevity

Large numbers of African Reed Warblers were re-trapped one or more times. Of 254 birds trapped between 1 August 1996 and 31 July 1997, 112 (44%) were re-trapped a month or more after the capture date and 73 (29%) were re-trapped more than six months later in a subsequent breeding season. Most of these were trapped at exactly the same site within the lagoons where they had been first

Table 2. Moult in African Reed Warblers at Phakalane sewage lagoons, 1996-2001.

	No. in moult	Score 1-10	Score 11-20	Score 21-30	Score 31-40	Score 41-49
February	1	1				
March	15	11	3	1		
April	11	7	3		1	
May	7	3	1	1	1	1

ringed. Small numbers moved to different sites at Phakalane; these were mostly young birds, dispersing around the lagoons. Following drying out of the site and burning of the reeds in 1999, there were more movements between the ringing sites at the lagoons. Between seasons there was a strong degree of site fidelity, adults returning in subsequent summers to the same site where caught the previous summer.

Several African Reed Warblers that were first caught in the winter months were subsequently re-trapped in following breeding seasons. For example, a bird caught in July 1996 was re-trapped in January, March and November 1998 and February 1999. Five of nine birds caught during August 1996 were caught in subsequent summers. A June 1997 bird was re-trapped two months later and one in July 1997 was caught again in the summer of 1999/2000. A June 1998 bird was caught again in December 1998 and February 1999. Six re-trapped birds caught in early August 2000 had been previously caught in the summer.

The study at Phakalane S.P. has not continued long enough to provide any longevity data although at least 18 (7.2%) of 249 African Reed Warblers ringed between July 1996 and April 1997 were still alive in 2000/2001. The oldest bird, up to April 2001, was ringed in August 1996 and controlled in late November 2000, making it at least 51 months. However, a ringed bird that was recaptured at Phakalane S.P. on 15 Feb 2003 had been ringed six years, three months and 13 days previously, on 2 Nov 1996, and another retrap had been ringed on 9 March 1997, five years, 11 months and eight days previously.

Discussion

Relative abundance

In southern Africa African Reed Warblers are abundant, and regularly makes an appearance in the top twenty most-ringed landbirds e.g. Oatley (1994), Oatley & Best (1997), Oschadleus (1999a). In the eleven years from July 1988 to June 1999, African Reed Warblers ($n = 7772$) were caught in more than

twice the numbers of Lesser Swamp Warblers ($n = 3537$) and 12x those of Little Rush Warblers ($n = 648$). At Phakalane S.P., African Reed Warbler was by far the most numerous of the 'swamp' warblers, comprising over 81% of the catch of the three African species (Table 1), with on average, four or five African Reed Warblers caught for each Lesser Swamp Warbler. However, at most locations within the site, the latter species outnumbered African Reed Warblers in the winter and sometimes too in the very early summer months. Further north at Francistown, 93% of the catch comprised African Reed Warbler, 7% Lesser Swamp Warbler and 0% Little Rush Warbler (D.Philip & N. Bousefield, in litt.).

At other sites in southern Africa the ratio of African Reed Warblers to Lesser Swamp and Little Rush Warblers varies enormously with the lowest proportion (19%) of African Reed Warblers and highest proportion of Lesser Swamp Warblers (71%) being at Witbank, South Africa (Z & H. Bernitz, in litt.). A relatively low proportion (45%) of African Reed Warblers was caught in Swaziland where there was the highest proportion of Little Rush Warblers (Monadjem, 2000). Between 50 and 60% of the catch of the three species comprised African Reed Warblers in the former Transvaal (K.Raijmakers & S. Raijmakers in litt.) and North West Province (G. Grobler, in litt.), 73% in the former Free State (Grobler 1998), 88.5% in Qwa Qwa National Park (Botha 1997) and in western Namibia over 99% of the catch comprised African Reed Warblers (R.Braby, in litt.). However, this is not surprising given that the range of Lesser Swamp Warbler and Little Rush Warbler is far more easterly than that of African Reed Warbler (Barnes 1997, Herremans 1997).

Further north in Africa, at Lake Naivasha in Kenya, the relative abundance of the three warbler species was very different to that at Phakalane but akin to that at Witbank. Lesser Swamp Warbler was dominant, forming 65% of the total catch (362) of warblers (resident and palaeartic) and 90% of the resident species (Tyler *et al.* 1991, Tyler 1991). However, it is possible that the large numbers of Lesser

Swamp Warblers were passage migrants. Little Rush Warblers comprised 5% of the total warbler catch whereas only eight (c. 2%) African Reed Warblers (race *cinnamomeus*) were caught.

Biometrics

The race of *A. baeticatus* at Phakalane S.P. is likely to be *halla*e (Clancey 1994). Wing lengths (Table 3) conform to the biometrics of this race (Urban *et al.* 1997). Wing lengths and weights of birds caught elsewhere in Botswana, at Shashe Dam near Francistown by van den Brink *et al.* (1997) and at Francistown sewage ponds (D. Philip and N. Bousefield, in litt.) were almost identical to those at Phakalane. Ginn (1976) trapped birds further north along the Nata and Botetle Rivers and had some very long-winged birds but it is possible that these large birds may have been European Reed Warblers *A. scirpaceus*, which have relatively recently been realised to be frequent migrants in Botswana and Namibia (Komen 1989, van den Brink & Loske 1990, Herremans 1992, Tyler & Tyler 1997b). These two species are very similar and unless the length of the second outermost primary is compared with that of other primaries, could easily be misidentified. A small sample of African Reed Warblers caught in Swaziland by Monadjem (2000) were also rather similar in size to birds in south-east Botswana but these may be of the nominate race rather than *halla*e.

At Phakalane S.P. the heaviest birds in this study were caught mainly in March and April. This suggests that birds may have been putting on fat prior to migration northwards. Other heavy birds in September and November could perhaps have been passage birds continuing to breeding grounds further south. Herremans (1992) artificially grounded eight African Reed Warblers at night during nocturnal migration in late March and April 1991 and six of these birds were fat, i.e. ready to migrate some distance. Raijmakers & Raijmakers (1995) also found a few birds had gained 3.2g and 3.5g during April in the southern Transvaal.

Moult

It appears that primary moult of African Reed Warblers has only occasionally been reported in southern Africa. Herremans (1992) found that a few birds moulted remiges at the end of the austral summer. Thus, of eight birds that he caught, also at Phakalane, in March or April 1991, five had very worn, unmoulted plumage, one showed suspended moult after the replacement of the innermost primary and two had just started moult. In Natal, Craig (1983) did not record any birds in primary moult in a small sample caught up to first week of March, while Raijmakers & Raijmakers (1995) found only two of more than 200 birds with active wing moult in the southern Transvaal. They found that moult of body and head feathers was common at this time and about 30% of birds caught in March showed tail moult. In south-east Botswana ca. 15-35% of adult African Reed Warblers caught between late February and June at Phakalane were in primary moult. Birds that started moulting in March at Phakalane, may either complete their moult in Botswana or in wintering grounds further north. In 2000, some *A. baeticatus* caught in the early winter at Phakalane were in moult. In Malawi, Hanmer (1988) recorded moult of adults (races *sua*helicus and *cinnamomeus*) mainly between July and October and that of first year birds mainly from October to December but a few adults arriving from April to June showed interrupted moult.

Movements, migration and longevity

The African Reed Warbler was described as a summer visitor to the Gaborone area (Beesley & Irving 1976) although Barnes & Bushell (1989) noted some winter records. Both Penry (1994) and Herremans (1994) considered it a partial resident and my data support their views. My retrap data shows that some wintering birds are part of the breeding population although it is possible that others could be winter immigrants from further south. Harrison (1997) found increases in abundance in summer in all zones

of southern Africa but that proportionately more birds over-wintered in the north, as in Swaziland.

Herremans (1992, 1994) found a marked passage in south-eastern Botswana in March/April and again in September/November. Data from this study do not show much evidence of such passages, rather a gradual increase in numbers of African Reed Warblers at Phakalane at the end of the winter, between August and October, and a decrease in April at the end of the summer. However, some passage through the site is suggested by a bird caught at Phakalane in September 1998 which had been ringed at Bloemfontein, 494 km to the south, in December 1995 (Oschadleus 1999b). Perhaps emigration of warblers in March and April from Phakalane masked any immigration of passage birds.

The destination of African Reed Warblers, which leave Phakalane S.P. during March or April, is unknown. Wintering quarters of southern African birds have been suggested as Malawi or elsewhere in central Africa (Maclean 1993), but no recoveries of ringed birds have been reported in these areas. In southern Malawi, Hanmer (1988) found that African Reed Warblers were not resident in her study area at Nchalo. They appeared in late April to June, with maximum numbers caught between September and November. Most of the birds that Hanmer caught were of the small race *cinnamomeus* with a few ascribed to *suahelicus*. At this time, African Reed Warblers of the races *baeticatus* and *hallae* are back in their summer breeding areas in South Africa and south-east Botswana. It is therefore perhaps more likely that birds from south-east Botswana migrate to the Okavango Delta, the Chobe/Zambezi area or Zambia, rather than to Malawi, for the winter months. Tree (1996) noted birds in full song at Kazungula, Zambezi River, on the north-east Botswana/Zimbabwe border from April to July; these birds had gone by early October. Some birds from southern Africa appear to head north through Zambia (Tony Tree in litt.). When mist-netting between 25 January and 18 March along the Kafue River in 1965, he caught *A. baeticatus* only on the south-fac-

ing sides of nets and apart from one on 4 February he caught all others only during the second half of February. Irwin (1981) noted a pronounced winter exodus from Zimbabwe, although a few birds were present through the year.

The high degree of site fidelity found by African Reed Warblers at Phakalane in successive summers has been demonstrated elsewhere. For example, Komen (1991) only re-trapped birds at his original ringing site and Monadjem (2000) found a 9.3% recapture rate at two dams in Swaziland. Continued ringing at Phakalane would be valuable to better show site fidelity and longevity, with 75 months being the current longevity record there. Komen (1991) recorded one bird in Namibia surviving for 100 months, and noted another record in southern Africa of 83 months. K. & S. Raijmakers (in litt.) caught an African Reed Warbler 87 months after it had been ringed, whilst Hanmer (1987) reported a longevity record of 102 months.

Parasites

At least seven African Reed Warblers had one or more ticks on their heads as recorded by Oschadleus *et al.* (1996). Numerous African Reed (and Lesser Swamp) Warblers had feather lice, particularly on old wing feathers at the end of the summer.

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References

- Barnes K.N. 1997.** African Sedge Warbler *Bradypterus baboecala*. In *The Atlas of Southern African Birds* Harrison J.A. Allan D.G. Underhill L.G. Herremans M. Tree A.J. Parker V. & Brown C.J. (eds). Pp 246-247. BirdLife South Africa Johannesburg.
- Barnes & Bushell B. 1989.** Checklist of the birds of the Gaborone area Botswana Bird Club Gaborone.
- Barnes K.N. & Herremans M. 1997.** Cape Reed Warbler *Acrocephalus gracilirostris*. In *The Atlas of Southern African Birds* Harrison J.A. Allan D.G. Underhill L.G. Herremans M. Tree A.J. Parker V. & Brown C.J. (eds). Pp 238-239. BirdLife South Africa Johannesburg.
- Beesley J. S.S. & Irving N.S. 1976.** The status of birds of Gaborone and its surroundings. Botswana Notes & Records 8: 231-261
- Botha A.J. 1997.** Report on ringing training workshop held at Qwa Qwa National Park Eastern Free State. *Mirafra* 14 (3 & 4): 2-5
- Clancey P.A. 1994.** Further comment on *Acrocephalus baeticatus* and *A. cinnamomeus* of the Afrotropics. *Honeyguide* 40: 262-267.
- Craig A.J.F.K. 1983.** Moults in some southern African passerine birds: a review. *Ostrich* 54: 220-237.
- Ginn P. J. 1976.** Birds of the Makgadikgadi – a preliminary report. *The Wagtail* 15: 21-96.
- Grobler G. 1998.** Summary of ringing activities at Bishop's Glen: 1993-1998. *Mirafra* 15: 15-17.
- Hanmer D.B. 1987.** Getting older in Malawi. *Safring News* 16: 73-78.
- Hanmer D.B. 1988.** Moults in the Cape Reed and African Marsh Warblers *Acrocephalus gracilirostris* and *A. baeticatus*. *Proc. VI Pan-African Congress* (Francistown): 331-337.
- Herremans M. 1992.** New record of European Reed Warbler from Botswana. *Babbler* 24: 10-13.
- Herremans M. 1993.** Why is artificial groundling of migratory passerines at night rather unsuccessful in southern Africa? *Safring News* 22: 43-46.
- Herremans M. 1994.** Fifteen years of migrant phenology records in Botswana. *Babbler* 28: 47-68.
- Harrison J.A. 1997.** African Marsh Warbler *Acrocephalus baeticatus*. In *The Atlas of Southern African Birds*. Pp. 234-235. Harrison J.A. Allan D.G. Underhill L.G. Herremans M. Tree A.J. Parker V. & Brown C.J. (eds). BirdLife South Africa Johannesburg.
- Irwin M.P.S. 1981.** *The Birds of Zimbabwe*. Quest Salisbury.
- Komen J. 1989.** European Reed Warbler records. *Ostrich* 60: 91-326: 22-23.
- Komen J. 1991.** African Marsh Warbler longevity record. *Lanioturdus* 26: 22.
- Maclean G.L. 1993.** *Roberts' birds of southern Africa*. Cape Town; John Voelcker Bird Book Fund.
- Monadjem A. 2000.** Warblers ringed in Swaziland between 1994 and 1999. *Safring News* 29: 73-78
- Penry H. 1994.** *Bird Atlas of Botswana*. University of Natal Press Pietermaritzburg.
- Oatley T.B. 1994.** Annual report for the 1993-94 ringing year. *Safring News* 23: 83-87.
- Oatley T.B. & Best C.C. 1997.** Report on the 1996-1997 ringing year. *Safring News* 26: 67-71.
- Oshadleus H.D. 1999a.** Report on the 1998-1999 ringing year. *Safring News* 28: 31-34.
- Oshadleus H.D. 1999b.** Report on recoveries received at SAFRING: July 1998 – June 1999. *Safring News* 28: 35-41.
- Oshadleus H.D. Geyser R. & Heyne H. 1996.** Ticks on an African Marsh Warbler. *Safring News* 25: 13-14.
- Raijmakers J.M.H. & Raijmakers J.H.F.A. 1995.** Distribution size and moult of migrant warblers in the southern Transvaal. Part 2. *Safring News* 24: 3-12.
- Skinner N.J. 1983.** Breeding of the African Marsh Warbler at Gaborone Dam. *Babbler* 5:18.
- Tree A.J. 1996.** Recent Reports. *Honeyguide* 42: 112-122.
- Tyler S.J. 1991.** Birds of Lake Naivasha 2. Foraging niches and relationships between migrant and resident warblers in papyrus swamp. *Scopus* 14: 117-124.
- Tyler S.J. 1998.** A study of warblers in reedswamp in south-east Botswana. In Adams N.J. & Slotow R.H. (eds) *Proc. 22 Int. Ornithol. Congr. Durban*. *Ostrich* 69: 336.
- Tyler S.J. 2001.** A Review of Waterbird Counts in Botswana 1991-2000. *Babbler Suppl. 1*. BirdLife Botswana Gaborone.
- Tyler S.J. & Bishop D. 1998.** Important Bird Areas of Botswana. In: *Important Bird Areas of southern Africa* (ED. K.Barnes). BirdLife South Africa Johannesburg.
- Tyler S.J. & Tyler L. 1997a.** A year's ringing at Phakalane Sewage Lagoons in south east Botswana. *Safring News* 26: 81-83.
- Tyler S.J. & Tyler L. 1997b.** Observations on the seasonal presence and moult of European Reed Warblers *Acrocephalus scirpaceus* at a site in

south-east Botswana. Ostrich 68: 117-118.

Tyler S.J. Lewis J.M.S. & Tyler L. 1997. First record of Basra Reed Warbler *Acrocephalus griseldis* in Botswana. Ostrich 68: 44-45.

Tyler S.J. Tyler L. & Lewis J.M.S.L. 1991. Birds of Lake Naivasha 1. General studies. Scopus 14: 107-116.

Urban E.K. Fry H. & Keith S. 1997. *The Birds of Africa*. Vol.V. Academic Press London.

Van Den Brink B. & Loske K.H. 1990. Namibia and Botswana as regular wintering quarters for European Reed Warblers? Ostrich 61: 146-147.

Van Den Brink B. Bijlsma R.G. & Van Der Have T.M. 1997. European Swallows *Hirundo rustica* in Botswana. WIWO Report No. 56. Foundation Working Group International Wader and Waterfowl Research Zeist The Netherlands.

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