ARTICLES & REPORTS

SMALL PLOVER STUDIES IN SOUTHERN AFRICA

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INTRODUCTION

The small plovers (Charadrius spp.) have always held a great interest for me but it was only in 1962 that I started ringing studies on this group in the plover-impoverished Western Province of Zambia. My interest continued during university days in South Africa and while geologising in South West Africa. However, when I resettled in Zimbabwe in 1972 I made a concerted effort to capture and ring fairly large numbers of these birds in an attempt to study various aspects of their biology.

RINGING

Table 1 indicates the numbers of each species ringed in the different territories and from there it can be seen that the Kittlitz's (Charadrius pecuarius) and Three-banded Plovers (Charadrius tricollaris) have the highest figures. They are the commonest and most widespread species on the southern African sub-continent, particularly away from the coast.

STUDIES

The studies on this group have been various, from basic assimilation of mensural data, mass, primary moult, ageing and sexing criteria and seasonal movements to studies on territory, habitat, feeding and population dynamics, the latter a very long term study.

What has been learnt over the years? Quite a lot on some species and very little on others. My most intensive work was done on Kittlitz's and Three-banded Plovers about which a comparative ecological study was made at Lake McIlwaine (17 55 S; 30 47 E) during the drought year of 1973 with continuing lower key studies subsequently. Much information was gathered, using colour ringed birds, on territory and general breeding biology while breeding

TABLE 1

NUMBERS OF PLOVERS RINGED IN EACH TERRITORY UP TO THE END OF 1978/79 SEASON

SPECIES	ZAMBIA	ZIMB.	BOTS.	S.W.A.	C.P.	O.F.S.	TOTAL
Ringed Plover C. hiaticula	4	32	-	-	46	-	82
White Fronted Plover C. marginatus	4	21	12	3	140	-	180
Chestnut-banded Plover C. pallidus	-	-	5	2	14	-	21
Kittlitz's Plover C. pecuarius	76	1035	76	25	99	1	1312
Treble-banded Plover C. tricollaris	47	822	11	121	309	90	1400
Greater Sandplover C. leschenaulti	-	-	-	-	1	-	1
Caspian Plover C. asiaticus	1	-	51	-	-	-	52
Forbes Plover C. forbesi	7	-	-	-	-	-	7

habitat requirements were studied in detail. The ringing of the birds permitted, through recaptures, determination of populations present in a drought year in comparison to those present in years of normal or above normal rainfall both prior to and subsequent to 1973. Faithfulness or otherwise of birds to a breeding locality and recruitment into a local population of previous seasons' offspring from the same or other localities may also be determined. For instance, Kittlitz's Plovers are reasonably faithful to a breeding area while Three-banded Plovers rarely breed in the same locality for more than one season, and I have only one record of a site being used for more than two seasons.

Longevity records have proved problematic in highly nomadic species such as Three-banded Plovers or in Palaearctic migrants but are easier to obtain in those birds with more specialized habitat requirements such as White-fronted (C. marginatus), Chestnut-banded (C. pallidus) or even Kittlitz's Plovers. Table 2 shows the oldest known, from my own ringing studies, of each of the four above-mentioned species taking into consideration minimum possible age at time of ringing. Relate the figures obtained to the total number of birds ringed! What conclusions can we gain from these figures? That those species, such as Three-banded Plovers, which are prolific breeders are shorter lived or that because of their nomadic nature are less likely to be recaptured over a period of time? That less prolific breeders, such as Kittlitz's Plovers, are longer lived? That highly specialized birds such as Chestnut-banded Plovers may not even be able to breed annually over much of their breeding range because of prevailing drought conditions at localities such as Makgadikgadi Pan (20 40 S; 25 40 E) in Botswana and must necessarily be longer lived as is the case with flamingoes, birds with similar breeding habitat requirements?

RECOVERIES AND POSSIBLE MOVEMENTS

Much bird ringing is done in the hope of recoveries well away from the place of capture. Some of these recoveries can be very exciting but most tell us something at least about the migrations or nomadic wanderings of a species. Unfortunately recovery rates of small birds in Africa are very low, particularly in thinly populated parts such as Botswana or South West Africa. However ringing in conjunction

TABLE 2. LONGEVITY RECORDS IN FOUR CHARADRIUS PLOVERS

	Minimum age
White-fronted Plover	9 + years
Chestnut-banded Plover	11½ years
Kittlitz Plover	8 years
Treble-banded Plover	6 years

TABLE 3 RECOVERIES

Ringed Plover — All the following were ringed at Rondevlei Bird Sanctuary, Cape Town (34°05'S 18°30'E)

582-12106: 27 10 59 Ad — 0 0 61 Kherson Reg. (46°11'N 34°49'E) Russia

582-08707: 21 1 61 ? — 23 8 64 Kostroma Reg. (57°46'N 40°56'E) Russia

582-09525: 26 1 62 ? — 4 1 69 Salin de Giraud, Bouche de Rhone (43°25'N 04°44'E) France

Kittlitz Plover

2-48198 Ad♂ — 30 12 72 Lake McIlwaine (17°55'S 30°47'E) Rhodesia

23 3 74 Springhare Farm (20°00'S 28°31'E) Rhodesia (320 km S.W.)

Treble-banded Plover

652-00114 Ad — 6 11 66 Goreangab Dam (22°37'S 17°08'E) S.W.A.

28 1 69 Walvis Bay (22°40'S 14°30'E) S.W.A. (260 km W.)

TABLE 4 MAIN METHOD OF CAPTURE

	Mist-nets	Torch & handnet	Nest**
Ringed Plover	+		
Mongolian Plover	+		
White-fronted Plover	+	+	+
Chestnut-banded Plover	+	+	+
Kittlitz Plover	+	+	+
Treble-banded Plover	+	+*	+
Greater Sandplover	+		
Caspian Plover		+*	

* Particularly easy to capture with this method

** Birds do not desert, even with repeated interference

with observations throughout the year in one locality can give one a reasonable idea of the movements of our populations. Table 3 indicates all small plover recoveries of more than 100 km movement.

Kittlitz's Sandplover

In Zimbabwe and Zambia this species is essentially a dry season visitor from April to December and the few ringing recoveries have indicated that birds from the Salisbury area (17 50 S; 31 04 E) move south-westwards to Bulawayo (20 09 S; 28 36 E) and presumably on to Botswana, where they are common summer visitors, and possibly further on to South West Africa and the Cape Province. Wader ringers could do worse than tackle the large number of Kittlitz's that may congregate in Western areas at this time of year.

Coastal populations seem to be fairly sedentary although seasonal concentrations occur. Most other inland populations appear to exercise some degree of movement regulated by seasonal rainfall changes.

White-fronted Sandplover

The inland race, mechowi, is a visitor to sand rivers from May to December, retreating to the east coast (occasionally as far south as Port Alfred (33 36 S; 26 53 E) while the rivers are in flood. Migrants may be attached to various bodies of water in the interior if conditions are suitable. The coastal races are essentially resident with considerable dispersal of young birds.

Chestnut-banded Sandplover

This plover breeds in very few localities in southern Africa with the largest numbers concentrated around Etosha (18 50 S; 16 20 E) and Makgadikgadi Pans when they contain water. Considerable coastward dispersal occurs from these localities when they dry up and large concentrations may be found on both the east and west coasts. Other seasonal movements may occur with smaller populations, while some coastal populations are sedentary.

Three-banded Sandplover

This plover has the most varied and complex movements of any in our area. The majority of Zambian birds are dry season visitors. In the Salisbury area of Zimbabwe the majority of the dry season

population appears to leave the area during the summer rains only to be partially replaced by visitors from elsewhere. In Botswana small numbers occur throughout the year where water is found, but generally the largest numbers occur during the rains when there is widespread water available. In South West Africa at least two different populations (based on moult) occur with peak numbers recorded in the central highland from May to September. In the winter rainfall area of the Cape Province numbers are much higher during the rains while along the coast in the eastern Cape there are large winter concentrations at favoured localities when they are almost totally absent from the Karoo, the probable provenance of these birds. In the Orange Free State large populations occur in the winter at favoured localities. At all sites there is a constant through movement of birds at most times of the year and turnover is high. Much more information is needed on all populations and particularly on those of the eastern part of our area, especially Natal and Mocambique.

Palaearctic plovers

Apart from actual distribution and occurrence little is known about the birds visiting us, about migration routes, breeding areas, population structure, habitat requirements, ortstreue etc. There are four species that visit us regularly. The Ringed Plover C. hiaticula is a non-breeding visitor which occurs around our coast, but most commonly in the east, with small numbers visiting the interior. The Mongolian Sandplover C. mongolus is a scarce summer visitor down the east coast to about Port Elizabeth (33 59 S; 25 38 E). The Great Sandplover C. leschenaulti is a sparse summer visitor to at least Cape St. Francis (34 12 S; 24 59 E), rare further west. The Caspian Plover C. asiaticus is a nomadic bird with its non-breeding range that visits the interior, mainly Botswana, north and east South West Africa, the Orange Free State and northern Cape, from August to February. It may be common in suitable localities particularly in Botswana but may turn up anywhere in the interior, depending on the intensity of summer rains.

CONCLUSION

Clearly much has yet to be learnt about this group of birds but

they are worthy of much more study. Most species are easily captured (Table 4), and they are all restricted in varying degrees to habitat types that, except in the case of the Caspian Plover, represent less than 1% of the total region.

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