

## DISTRIBUTION, POPULATION SIZE AND CONSERVATION OF THE ANTARCTIC TERN

### *STERNA VITTATA* IN SOUTHERN AFRICA

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*Received 13 September 1988, accepted 12 December 1988*

### SUMMARY

BROOKE, R.K., COOPER, J., HOCKEY, P.A.R., RYAN, P.G., SINCLAIR, J.C., SUTER, W. & TREE, A.J. 1988. Distribution, population size and conservation of the Antarctic Tern *Sterna vittata* in southern Africa. *Cormorant* 16: 107-113.

More than 13 500 Antarctic Terns *Sterna vittata* visit the coast of southern Africa during the nonbreeding season. Twentyseven roosts are known, seven on offshore islands, the rest on the mainland. Stragglers have occurred in South West Africa/Namibia and Natal, South Africa but the bulk of the population is confined to the Cape Province of South Africa. In the southwestern Cape birds start arriving in March, achieve peak numbers in August and most have left by the end of October. In the eastern Cape birds start arriving in late May, achieve peak numbers in August and have left by mid November. Antarctic Tern roosts should be protected from human disturbance, where feasible. Feral domestic cats *Felis catus*, which prey on roosting terns, should be eliminated on Dassen and Robben Islands where large roosts occur.

### INTRODUCTION

Recent field work in the Cape Province of South Africa has shown that far more Antarctic Terns *Sterna vittata* regularly visit the coast in winter as nonbreeding migrants from more southerly latitudes (Clancey 1980, Harrison 1983) than previously thought (Cooper 1976). More roost sites have been discovered and numbers present are sometimes much greater than those given by Cooper (1976). These results are presented together with data on geographical distribution, seasonal occurrence and roosting behaviour. Subspeciation and the origins of birds visiting

southern Africa will be reported elsewhere. The conservation status of the Antarctic Tern in southern Africa is briefly discussed.

### METHODS

Counts of birds at roost sites in South Africa were made with binoculars or telescopes, as opportunities arose. Based on the characteristics of known roost sites (Cooper 1976), likely roosting sites were identified on maps and visited during the period 1971 to 1986. Special attention was paid to searching for roosts at the edges of the known range of the Antarctic Tern in southern Africa

(Cooper 1976).

### GEOGRAPHICAL DISTRIBUTION

The Antarctic Tern was first reported from South Africa by von Pelzeln (1869). The earliest specimen in a South African museum was taken in September 1884 at Port Elizabeth, eastern Cape (Transvaal Museum specimen), but it was not recognized as such primarily because the characters of the species were then so little known.

Outside the Cape Province (Fig. 1) the Antarctic Tern is scarce on southern African coasts. There are no records for Mozambique and only one recent unpublished photographic record of a single individual for South West Africa/Namibia, observed roosting on the beach with Common Terns *S. hirundo* between Sandwich Harbour and Walvis Bay during May 1987 (P.A. Buckley *in litt.*). It is an erratic visitor to Natal and its seas in very small numbers. Records fall in the months June to November, involving both adult and juvenile birds, mostly in the Durban area where most observers are based (Cooper 1976, Cyrus & Robson 1980, 1981, 1982, Sinclair & Wilson 1981, Cyrus & McCosh 1984, 1985a,b, Durban Museum specimen, G. Avery *in litt.*, JCS pers. obs.). The Antarctic Tern has not been recorded on the Transkei coast where there are few observers. A dead bird was found at the Kariega estuary on 17 October 1982 (Albany museum specimen). This is the only record from the eastern Cape east of Cape Padrone.

In western South Africa the Antarctic Tern has been recorded roosting north of Lambert's Bay (Fig. 1) on only one occasion (P.A. Buckley *in litt.*). A coastal survey on 2 October 1983 by RKB and WS from the Olifants estuary to Lambert's Bay did not reveal a single Antarctic Tern roost and no birds were seen in a two-day search at the estuary by P.D. Morant (pers. comm.) on 6 and 7 August 1983. One bird was seen flying with other terns just inside the Olifants estuary on 1 June 1984 (RKB

pers. obs.).

Not all Antarctic Terns wintering off southern Africa roost on land. The species is seen regularly in waters up to the shelf edge, often more than 150 km from land (Sinclair 1978, Ryan & Rose in press). Some, if not all of these pelagic birds roost at sea, either on the water or on floating wood or kelp *Ecklonia maxima* stipes. Most terns are seen roosting during relatively calm seas. The pelagic range of Antarctic Terns off southern Africa is greater than the distribution of coastal roosts; they are observed commonly north to 30°S (off Hondeklip Bay), with some stragglers north to 29°S (off the Orange estuary). Antarctic Terns are also regular offshore between Cape Agulhas and Port Elizabeth (B. Rose pers. comm.), an area where no coastal roosts have been found (Table 1, Fig. 1).

The ability of Antarctic Terns to roost at sea (or to remain on the wing when sea conditions are unsuitable for roosting) strongly suggests that the total population size from counts at coastal roosts (see below) is an underestimate.

### SEASONAL OCCURRENCE

The earliest and latest dates for wintering Antarctic Terns in the southwestern Cape are 26 March 1941 (South African Museum specimen) and 22 November 1983 (JC pers. obs.). August and September are the months of greatest abundance (Cooper 1976). In the eastern Cape the earliest date is 31 May 1972 (B. Every *in litt.*) and the latest date is 10 November 1971 (AJT, ringing data). August is again the month of greatest abundance (Randall *et al.* 1981). Cooper (1976) showed for the southwestern Cape that most birds have left there by October. More precisely, departure is completed in the second half of that month. However, AJT caught 11 birds for ringing in November at Cape Recife, eastern Cape.

There are a few records of birds failing to leave southern Africa for their breeding grounds. In addition to a beached bird in February at Elands

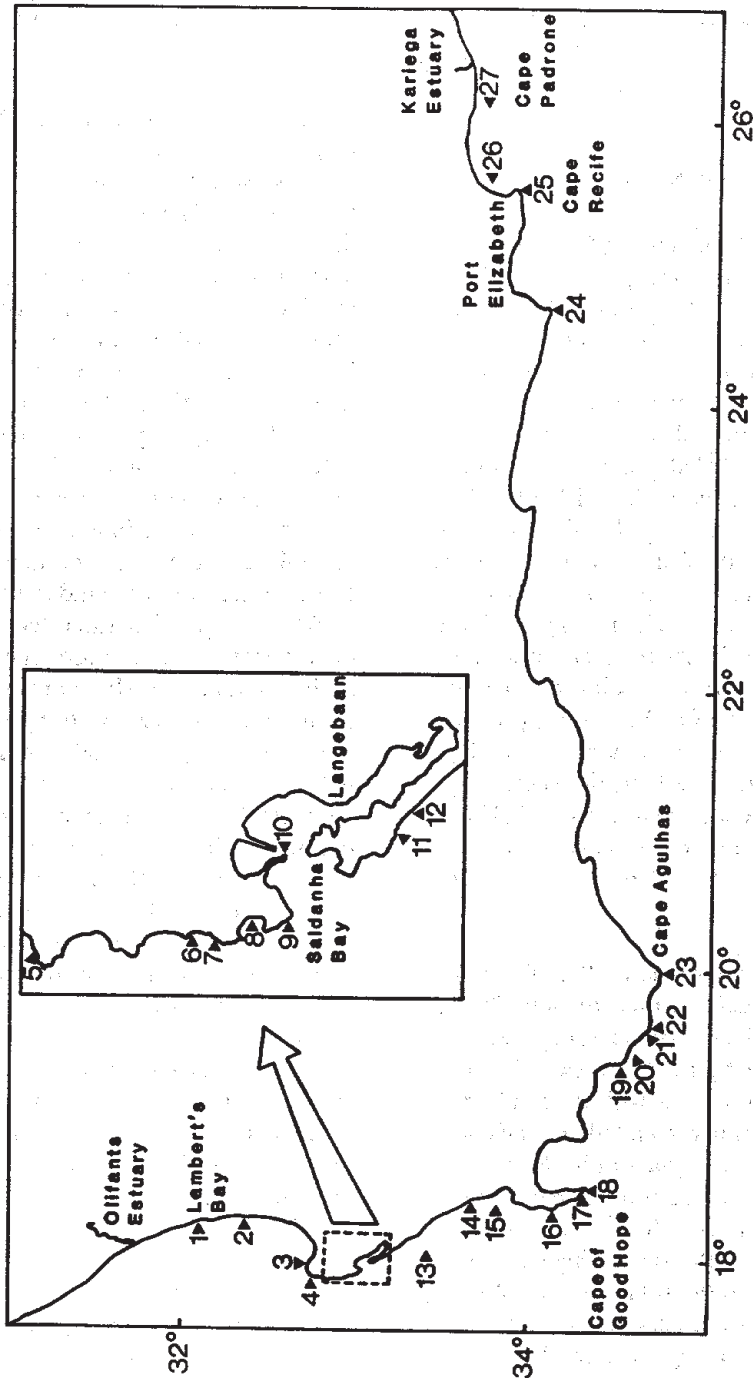


Figure 1

Geographical distribution of the Antarctic Tern in southern Africa. See Table 1 for details of numbered roosts

Bay (G. Avery *in litt.*), JCS has seen six birds on 23 December, two birds on 18 January and six birds on 15 February at The Kom roost. A single bird in full breeding plumage was seen off Saldanha Bay during February 1988 (B. Rose pers. comm.) and one in immature plumage within the Bay on 16 February 1984 (SW).

### POPULATION SIZE

Cooper (1976) reported the sum of highest counts of the South African wintering population of the Antarctic Tern as 2 148 birds at 12 roosts. A total of c. 13 500 birds was subsequently counted at 26 of 27 known roosts (Table 1). The two largest roosts, at Dassen and Dyer Islands, contained 61,9% of the estimated total population. The real population in South African waters is probably in excess of 15 000 birds. Seven roosts were on offshore islands, 20 on the mainland coast. Roosts ranged in size from two to c. 4 500 birds (mean 509 birds; median 106 birds) (Table 1). Adults, immatures and juveniles occur throughout the southern African range of the species. Juveniles (birds showing at least some juvenile feathers) were rare at diurnal southern African roosts; only 2,4% of all birds were juveniles (based on counts at several southwestern Cape roosts throughout winter). Along the south coast the proportion of juveniles was higher (7,4% at Dyer Island, WS). In the eastern Cape the numbers of juveniles at nocturnal roosts was substantial (AJT).

Antarctic Terns roost gregariously, often with other species of terns and gulls, either on low flattish rocks, usually at headlands, or on sandy beaches, often sheltered in part by nearby rocks. Table 1 lists the roost sites known to us with their substrata and the maximum number counted at each site. There is always coming and going of birds at roosts in daylight and we have no assurance that all birds in an area were at a roost when it was counted. Therefore, we have taken the sum of highest counts at each roost to estimate the total number of birds visiting South Africa. As discussed above, it seems that it is only birds foraging inshore that attend

coastal roosts, those foraging farther offshore staying at sea.

### CONSERVATION

The conservation of the Antarctic Tern in southern Africa is linked with the need to protect the 10 major (> 250 individuals, Table 1) roost sites from disturbance by man, dogs and cats. For example, the roost at The Kom is so disturbed, especially during weekends, that birds have to take off and land many times during a day. However, the continued use of such a roost over many years (pers. obs.) suggests that such disturbance may not be overly serious. Eleven (40,7%) of known roosts, totalling an estimated 10 045 individuals (73,2%), fall within legally proclaimed nature reserves and national parks (Table 1). The proclamation of more coastal nature reserves should help reduce disturbance at mainland roosts. However, in several (e.g. the Cape of Good Hope and Cape Recife nature reserves and the West Coast National Park) such proclamation has not halted human disturbance of tern roosts (pers. obs.). At least, such proclamations should result in the cessation of disturbance of tern roosts by offroad vehicles and domestic pets, especially dogs. Island roosts (64,4% of roosting individuals, 25,9% of roosts) are all protected in that landing is prohibited without permit. The recent (1987) transfer of most southern African offshore islands to the Cape Chief Directorate: Nature and Environmental Conservation and their declaration as provincial nature reserves is likely to improve further their conservation status.

No evidence exists for any deleterious effects on the species while in southern Africa from entanglement, pollution (oiling, pesticides or ingested plastic objects) or lack of food due to the activities of commercial fisheries.

We recommend that feral Domestic Cats *Felis catus* be finally eliminated from Dassen (32,8% of roosting individuals) and Robben Islands, since,

TABLE 1

MAXIMUM COUNTS AT DIURNAL COASTAL ROOSTS OF ANTARCTIC TERNS IN THE  
CAPE PROVINCE, SOUTH AFRICA, 1971-1986

Roost site and co-ordinates	Roost environment	Maximum number	Date	Conservation status*	Source
Southwestern Cape					
1. Bird Island, Lambert's Bay 32 05S, 18 18E	rocks	40	Jul 1977	R	This study
2. Elandsbaai 32 20S, 18 19E	rocks	46	10 Jul 1982	U	This study
3. Shell Bay 32 42S, 17 58E	rocks	2	1 Jul 1981	U	This study
4. Grootpaternosterpunt 32 44S, 17 54E	sandy beach	376	10 Jun 1980	U	This study
5. Bekbaai 32 49S, 17 53E	sandy beach	935	28 Aug 1983	U	This study
6. Hospital Bay 32 58S, 17 53E	sandy beach	15	22 Jun 1986	U	This study
7. Mauritz Bay 32 59S, 17 53E	rocks	331	22 Jun 1986	U	This study
8. Danger Bay 33 01S, 17 54E	sandy beach	107	18 Aug 1980	U	This study
9. North Head 33 03S, 17 55E	rocks	200	26 Jul 1977	U	This study
10. Marcus Island 33 03S, 17 58E	rocks	25	30 Aug 1979	R	This study
11. Klein Eiland 33 09S, 18 00E	sparsely vegetated flat	452	19 Aug 1980	R	This study
12. Stofbergfontyn beach 33 10S, 18 01E	sandy beach	140	23 Jul 1983	R	G. Avery ( <i>in litt.</i> )
13. Dassen Island 33 25S, 18 05E	rocks	c. 4 500	Aug 1977	R	This study
14. Koeberg Power Station 33 41S, 18 26E	sandy beach	9	26 Jun 1982	U	This study
15. Robben Island 33 45S, 18 22E	sandy beach	min. 2	18 Jun 1930	U	B.M. (N.H.): two specimens
16. The Kom	rocks	c. 1 200	16 Sep 1979	U	This study

34 08S, 18 19E						
17. Hoek van Bobbejaan	rocks	104	6 Jul 1980	R	This study	
34 19S, 18 24E						
18. Platboompunt	rocks	150	28 Aug 1976	R	Cooper (1976)	
34 38S, 18 27E						
19. Danger Point	rocks	337	27 Jul 1980	U	This study	
34 38S, 19 17E						
20. Dyer Island	rocks	c. 4 000	2 Sep 1983	R	This study	
34 41S, 19 25E						
21. Buffeljagsbaai	rocks	16	26 Jul 1980	U	Brooke & Cooper (1982)	
34 45S, 19 36E						
22. Quoin Point	rocks	43	29 Aug 1976	U	Cooper (1976)	
34 47S, 19 39E						
23. Cape Agulhas	rocks	53	31 Jul 1983	U	This study	
34 50S, 20 01E						
Eastern Cape						
24. Cape St Francis	rocks	15	15 Aug 1973	U	Cooper (1976)	
34 12S, 24 51E						
25. Cape Recife	rocks	360	9 Nov 1971	R	This study	
34 02S, 25 42E						
26. Brenton Rock	rocks	24	6 Jun 1979	R	Randall <i>et al.</i> (1981)	
33 49S, 25 46E						
27. Bird Island	rocks	c. 250	6 Aug 1979	R	Randall <i>et al.</i> (1981)	
33 51S, 26 17E						
Total		13 732				

\*R = within a nature reserve or national park; U = legally unprotected.

together with other seabirds, roosting terns *Sterna* spp. form part of their prey (Cooper 1977, Cooper et al. 1955, Berruti 1986).

#### ACKNOWLEDGEMENTS

We thank G. Avery for data on beached specimens. J. Cooper acknowledges the support of the South African Scientific Committee for Antarctic Research and the South African Department of Environment Affairs. P.A.R. Hockey acknowledges the support of the South African National Committee for Oceanographic Research. W. Suter acknowledges the support of the Swiss National Science Foundation while at the FitzPatrick Institute. We thank A. Berruti and D. Parmelee for constructive criticism.

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