

TERNS ON THE NAMIBIAN COAST IN EARLY 1998

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Much work has been carried out worldwide on terns at their breeding colonies, but relatively little has been done on birds in their non-breeding quarters, other than occasional counts and an assessment of ringing recoveries (eg. Vandewalle 1988). In southern Africa ringing studies on non-breeding terns have been relatively limited and by far the largest trapping attempt was that made at Cape Recife, Port Elizabeth, in 1971/1972 by Karl Edwards and myself (Edwards 1974). Opportunistic ringing has been carried out by a series of people over the years, with mainly Common Tern *Sterna hirundo* and Whitewinged Black Tern *Chlidonias leucopterus* being the object of their attentions. The only species for which significant numbers have been ringed in the sub-region is the Common Tern. At Safring, however, a considerable body of data has been collected on palearctic birds ringed in Europe and recovered in southern Africa, as well of recoveries of Swift Tern *S. bergii* within southern Africa. These recoveries are only the tip of the iceberg and frequent checking of terns on southern shores will show that a considerable number of them carry rings, the details of which will not be known unless the birds are captured.

This study trip was organised for the period from late January to early March, to look at the possibilities for further studies on this group, as well as on waders. Work was carried out in the vicinity of Swakopmund, especially at the Mile 4 Salt Works, Walvis Bay and Sandwich Harbour from 23 January to 7 February and from 21 February to 5 March. An attempt was made to establish the location of diurnal and nocturnal roost sites (with no success on the latter with regards to terns). A considerable amount of time was spent, with the aid of a 20-60 zoom telescope, assessing the flock components and searching for colour-ringed Sandwich Tern *S. sandvicensis* and Swift Tern and determining the proportions of the various flocks which were carrying metal rings. On

short-legged birds such as terns that gather in considerable flocks, this is often a difficult exercise. It was made much easier at the oyster ponds on both the Mile 4 Salt Works and the Walvis Bay Salt Works. Here baskets carrying the oysters are hung on vertical poles that protrude from the water. On these poles, large numbers of terns may spend varying periods of the day loafing. Although it was thought that the birds would night roost there too, they always left towards, or just after, dark when they were seen to feed offshore until it was too dark for further observations.

The area of Sandwich Harbour, Walvis Bay and Swakopmund, is a large one for one person to cover and really needs a larger team to obtain the best results. Synchronised observations would give a better indication of overall numbers involved, the siting of the different species on different dates, their diurnal rhythm and flight paths to nocturnal roost sites. The potential area for roosting terns at the two larger sites, at tides other than around spring tide, is enormous. This makes it very difficult to station oneself and catching equipment in the correct locality. Accessibility at night is further hampered by the lack of a boat, but if positioned correctly, the potential for catching large numbers of terns is considerable. Trapping during the day is much more difficult and requires devices such as cannon or whoosh nets, positioned at sites known to be used on a daily basis. Cannon nets, in particular, need a fair-sized crew for optimum use.

Only small numbers of terns were caught during wader-netting exercises, although this resulted in the capture of an Estonian-ringed Sandwich Tern. Despite the fact that this species has been ringed at colonies in Estonia for many years, this is only the third recovery on our coastline. This gives a hint of the knowledge we lack by relying mainly upon recoveries of dead ringed birds.

Sandwich Harbour

The biannual count of waterbirds (CWAC) took place during the period 28 January to 1 February and covered both Sandwich Harbour and Walvis Bay. My wife and I took on the unenviable task of counting and sorting out the huge flocks of terns at Sandwich Harbour, covering the entire north side on the 28 January, and the entire south side on the 29th (myself only). An overall total of 180 000+ birds was obtained. This figure was confirmed on the 30th, by simultaneous counts performed by Mark Boorman and Sandra Dantu on the north side, and Rob Simmons on the south side. The counts of Caspian *S. caspia*, Swift, Sandwich, Damara *S. balaenarum* and White-winged Black Tern, were relatively easy because of their small numbers and conspicuousness and the fact that they generally kept to themselves, or to the edge of larger masses of Common and Black Terns *C. niger*. The main masses were counted and estimated by block-counting one hundred birds at a time. Sample counts of individual flocks, or portions of larger flocks, were made to determine the ratio of Common to Black Terns. In this manner, I counted all the terns on the lagoon and sampled a total of over 23 000 Common/Black Terns. It should be made clear that at no time, either onshore or offshore, were any Arctic Terns *S. paradisea* seen or suspected and that the following counts apply only to Common and not 'Commie' Terns.

The overall totals for all species of terns are shown in Table 1. The figures for Common and Black Terns have been adjusted and are based purely on my own counts. I have found, over a period of many years of counting large numbers of waders and other waterbirds, that I tend to

Table 1. Total counts of terns made on 28 and 29 January 1998 at Sandwich Harbour.

Caspian Tern	31
Swift Tern	34
Sandwich Tern	210
Common Tern	160-170 000
Damara Tern	28
Black Tern	30-35 000
Whitewinged Black Tern	70

underestimate by about 10%, so my figures have been adjusted upwards in compensation. All the other species were fairly-to-very accurately counted. Furthermore, it is not known how many Common and Black Terns were feeding out to sea during the counting period and this potential may also be included in my adjustment.

Walvis Bay Area and the Mile 4 Salt Works, Swakopmund

No complete counts of terns were made at Walvis Bay owing to access difficulties. Provision of a boat would be a necessity, in future. However, peak individual species counts and the dates on which they were made, appear in Table 2. In late January, many thousands of terns frequented the Mile 4 Salt Works but access to this sensitive cormorant breeding site was not made until later in February, by which time the terns had moved on. Counts were made only at the oyster beds and relate mainly to Swift and Sandwich Terns.

Ringed and colour-ringed terns

During the continuous sampling of tern flocks, an effort was made to estimate the numbers of birds wearing metal rings. A note was also made of all colour-ring sightings. As mentioned above, this was a difficult exercise and was most successful when the birds were spaced out on the protruding poles at the oyster beds and where small groups were sitting on wooden jetties or rocks. In all, it was estimated that about 15% of Swift Tern, a varying 15-20% of Sandwich Tern and about 3% of Common Tern, were already ringed.

Only five Swift Terns were seen to be wearing colour rings, all of which were birds ringed in the Western Cape. One had been ringed in 1980 at Jutten or Malgas Island, two birds in either 1986 or 1995 at Marcus or Robben Islands (unfortunately the same colour combination was used in both of those years), one bird at Robben Island in 1996 and one at Malgas Island in 1997. According to Dr Rob Crawford, the latter was the most surprising control, as he did not expect birds to move north in their first year.

Some 30 colour-ringed Sandwich Terns were noted, of which 24 had been ringed as *pulli* at one

colony in the Netherlands (Stienen & Brenninkmeijer 1998). Of these, 17 were ringed in 1995, five in 1996 and two in 1997. This follows earlier analyses of western European-ringed Sandwich Terns, in which it was found that the majority of first-year birds spent their first winter further north in West Africa and only migrated further south with increasing age (Cramp *et al.* 1985). Details of the other colour rings have not yet been accessed, but the birds do not appear to come from the only extant British scheme, at the Sands of Forvie in Scotland. As yet, we have been unable to trace details of other schemes in use at present. The control of Estonian origin was ringed there as a *pullus* in June 1984.

Discussion

The numbers of Common and Black Terns found along the coastline, and especially at Sandwich Harbour, were the highest yet recorded on this coast. This appeared to be due to the abnormally

large numbers of krill (a small shrimp) moving slowly along the coastline. With the apparent effect of El Niño, the coastal waters were warmer than usual, with temperatures even reaching 21°C. These large krill numbers did not appear to have any direct effect on tern species other than the Common and Black, and the movements of the two more common larger terns, the Swift and Sandwich, were apparently not related to them. The Caspian, Little and Whitewinged Black Terns are all essentially inshore feeders, preferring to feed in lagoons and ponds, while the Damara Tern feeds anywhere close to its breeding localities but does not appear to wander very far offshore.

Common Tern numbers of this magnitude must represent a substantial portion of a population. The provenance of the birds reaching the west coast of southern Africa is known, from ringing recoveries to date, to be the Baltic Sea area. Here

Table 2. Some peak counts of terns made in the Walvis Bay area and at Mile 4 Salt Works, Swakopmund.

Caspian Tern ¹	44	Walvis Bay Salt Works	04.03.98
Swift Tern	114	“	01.02.98
	770	Mile 4 Salt Works	02.02.98
	840	“	07.02.98
	270	Walvis Bay Salt Works	23.02.98
	54	Mile 4 Salt Works	02.03.98
Sandwich Tern	523	“	25.01.98
	590	“	03.02.98
	800	“	07.02.98
	700	Walvis Bay Salt Works	23.02.98
	280	Mile 4 Salt Works	03.03.98
Common Tern ²	10 000+	Walvis Bay	31.01.98
	2 000	Walvis Bay Salt Works	25.02.98
Little Tern	1	Walvis Bay	03.03.98
Damara Tern ³	56		03.03.98
Black Tern	600	Mile 4 Salt Works	24.01.98
	10 600	Walvis Bay	25.02.98
Whitewinged BlackTern	470	“	24.02.98
‘Black’ Skimmer ⁴	1	“	24 & 28.02.98

¹ at a breeding site.

² included small numbers of Black Tern.

³ a much bigger overall count was made at Walvis Bay on 31.01.98 by Mark Boorman.

⁴ this record is still under investigation owing to the problems of separating this and the African Skimmer in the field.

the overall breeding population is in the vicinity of 160 000 birds (extrapolated from Cramp *et al.* 1985). This figure, when added to a floating non-breeding population and to annual productivity (conservatively estimated at 50% on an average egg production of about 2.65/pair), should give a further 150 000+ birds. Thus during this survey, this relatively short section of coastline (less than 100 km) together with its wetlands, may possibly have held in excess of 50% of the Baltic population. This is a very high proportion of any one population, regardless of its size.

Much less is known about the population from which our Black Terns originate. It is possible that a total admixture, from across the Eurasian range of the species, reaches these nonbreeding quarters, or alternatively, a leapfrog migration may occur, with the most easterly populations wintering the farthest south. There are no ringing recoveries to support or refute this hypothesis (see Herremans *et al.* 1997, for refutation of a previously-claimed ringing recovery).

Previous estimates show that the total number of this species present along the Namibian coastline may possibly exceed 10 000 birds (Harrison *et al.* 1997). Careful sample checks of just over 13 000 Common/Black Terns on 28 January at Sandwich Harbour gave a ratio of 1 170 Black Tern to 11 460 Common Tern, or 10.6% Blacks out of a total count of 50 000+. However, most of these counts were made well into the lagoon on the north shore, where the proportion of Black Terns decreased very rapidly, the farther one went from the mouth of the lagoon.

Further sample counts, made on the sandflats on the south shore of the lagoon on the 29 January, gave a ratio of 1 600 Black to 8 600 Common Terns or 18.6% Blacks. As the largest concentration of terns was found on the south shore and was estimated at 130 000, this would give a minimum total of about 24 200 birds, with a further 5 800 from the north side. This gives a total of 30 000 birds. However, as the sample counts on the north side were biased to the inner lagoon flocks, the total number on that site may have been underestimated and it is not unreasonable to round the total figure off to a possible 35 000

Black Terns – the highest number ever suspected on the Namibian coast. Furthermore, there were still Black Terns at Walvis Bay and the Mile 4 Salt Works during this period, and the total number of birds feeding out to sea during the counts is also unknown. Thus an absolute figure of 35 000+ birds would probably be a fair assessment.

The total Eurasian population is not known, but the majority of birds spend the boreal winter along the west coast of Africa, from Mauritania to Namibia. Transient concentrations have been recorded, totalling 80 000 in the Netherlands in the first half of August, and 100 000 on the Banc d'Arguin, Mauritania, in early September. However, the majority winter in the Gulf of Guinea, notably from Ghana across to Nigeria (Cramp *et al.* 1985). A total of 35 000+ birds overwintering in Namibia, may form a very significant proportion of the total Eurasian population.

It is difficult to interpret the counts of the other species of terns without a series of simultaneous counts at all major sites. However, looking at the peak counts of Swift and Sandwich Terns at Swakopmund and Walvis Bay (Table 2) it would appear that the main body was moving along the coast following shoals of small fish. When the large numbers were roosting at Mile 4 Salt Works, they would move off in the late afternoon and feed offshore till after dark. When there were few birds, little feeding activity was seen in the area. At Walvis Bay, the largest numbers occurred when shoals of small fish were present in the bay itself and birds fed mainly in the later part of the afternoon. In late February, birds were only arriving at the roost site at Mile 4 Salt Works in the late afternoon but departed again at dusk. The number of Sandwich Tern on the coastline probably totalled between 1 500 to 2 000 birds; that of Swift Tern between 1 200 to 1 500 birds.

The numbers of Caspian Tern fluctuate radically from year to year but there were probably fewer than 80 birds in the region in early 1998. The birds at the Walvis Bay Salt Works on 4 March had only recently moved onto their breeding island; it is not known if egg-laying had commenced.

Damara Terns were still breeding during the count period, although most attempts appeared to be over. The proportion of young birds in the flocks was very low and must give reason for concern. This species is still being monitored by Rod Braby of the Department of Environment and Tourism. This is a fairly unsociable bird, generally shunning concentrations of other terns and forming only loose roosting assemblages during the day. The single Little Tern, a rarity on the Namibian coast, was seen together with Damara Tern when its long, slim bill and longer wings and tail made it very easily separable on the ground. This bird was an adult, with bill and leg colour in transition to breeding colour but cap not fully moulted. Although this was a pale grey-rumped bird, it is not certain whether it was an overshoot of the Western European population which winters in West Africa, or a northward-ranging nomad of the Eastern European population, which winters along the east and south coast to Langebaan Lagoon. The eastern birds tend to be more grey-rumped whilst the western birds are usually white-rumped.

Whitewinged Black Tern tend to scatter to feed during the day and may move considerable distances in common with most tern species. At Sandwich Harbour they fed on insects over the damp sandflats and dune slacks, but at Walvis Bay many would appear in the late afternoon, flying in from further up the coast where none were ever seen during the day. Small numbers were usually to be seen hawking insects at the

Walvis Bay Salt Works, but were very scarce at the Mile 4 Salt Works. Overall numbers in the area may have been as many as 6-700. As with the Black Tern, the population these birds originate from is unknown, but they may be of more easterly origin.

Intensive ringing studies are required on all tern species frequenting our shores, with the possible exception of the Swift Tern, which would still yield valuable morphological information on full-grown birds. Regular trapping at any site would likely result in the capture of birds already ringed elsewhere while, in the case of Palearctic terns, the chance of recoveries or controls of southern African-ringed birds back in Europe would be far greater than the recovery and control rates in southern Africa.

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