

Waders (Charadrii) and other coastal birds in the Lüderitz region of South West Africa

by

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1 INTRODUCTION

Several surveys of coastal birds have recently been conducted in southern Africa (Summers *et al.*, 1976; Underhill *et al.*, 1977, 1980; Whitelaw *et al.*, 1978; Cooper *et al.*, 1980), but little is known of the birds of the Diamond Coast of South West Africa since access is restricted. The only section of mainland readily accessible between Sandvis and the Orange River is at Lüderitz. Cooper *et al.* (1980) present data for the islands off the Diamond Coast and for Lüderitzbucht, the only mainland coast so far surveyed. This paper reports on counts of coastal birds made in the Lüderitz area on the mainland between Agate Beach and Grossebucht, and also at the five islands of Halifax, Shark, Seal, Penguin and Flamingo during March 1981.

2 STUDY AREA AND METHODS

Halifax, Seal and Penguin Islands are described by Rand (1963). Shark Island is rocky and almost totally devoid of vegetation, while Flamingo Island (which has never previously been surveyed) is small with a bare sandy interior and a rocky coast-line. Flamingo Island is connected to the mainland by a mud bank at low tide. The mainland is predominantly rocky, but there are sandy beaches at Grossebucht, between Diaz Point and Angra Point and at Agate Beach (Fig. 1). The upper reaches of Second Lagoon are muddy, much of the mud only being flooded at spring tides. The coast south of Halifax Island to Grossebucht is extremely rugged and exposed with numerous inlets and rifts running back into the desert. Much of this area comprises steep cliffs.

Each area was surveyed once by walking the shore-line at low tide and all species were recorded (see Underhill *et al.*, 1980). Two surveys were made of birds at the Lüderitz Sewage Works, the only standing fresh water available in the area. The maximum counts for each species are compared with data collected in November 1978 (J. Cooper & H. G. Robertson *in litt.*).

ABSTRACT

Data are presented for bird densities along 46 km of coast and at five islands in the Lüderitz area. Resident waders accounted for 57.9% of all waders on the mainland. The Lüderitz Sewage Works are identified as an important habitat for birds.

3 RESULTS

Counts made at the five islands are detailed in Table 1 and counts at the mainland localities in Table 2. A total of 2 289 birds (excluding penguins and cormorants) was counted at the islands, of which 479 (21%) were waders. The most abundant wader species was the African black oyster-catcher *Haematopus moquini* which made up 56% of all waders. The most abundant Palaearctic species was the turnstone *Arenaria interpres* (33% of waders). Seal Island supported the largest wader population, 37% of the total. The largest number of birds was counted at Shark Island (860), gulls accounting for 95% of the total.

On the mainland, waders made up 53% of all birds counted (excluding cormorants). The most abundant species were turnstone and curlew sandpiper *Calidris ferruginea*, accounting for 49% of all waders. Kittlitz's sand-plover *Charadrius pecuarius*, Terek sandpiper *Xenus cinerea* and curlew *Numenius arquata* have previously been recorded in Lüderitzbucht (Cooper *et al.*, 1980), but were not seen during this survey. Lüderitzbucht was defined as the area between Angra Point and the harbour. The major elements in the non-wader population were greater flamingo *Phoenicopterus ruber* (25%), kelp gull *Larus dominicanus* (26%) and Hartlaub's gull *L. hartlaubii* (33%). Three tern species have previously been recorded at Lüderitz but were not seen during this survey, these are: Caspian tern *Hydroprogne caspia*, common/Arctic tern *Sterna hirundo/paradisea* and Damara tern *S. balaenarum* (Cooper *et al.*, 1980). The total numbers of penguins and cormorants counted within the study area were: jackass penguin *Spheniscus demersus* 1562 (all at Halifax Island), white-breasted cormorant *Phalacrocorax carbo* 183, Cape cormorant *P. capensis* 2616, bank cormorant *P. neglectus* 354 and crowned cormorant *P. coronatus* 452.

At the Lüderitz Sewage Works there are noticeable differences between counts made in November and March (Table 3). Palaearctic wader numbers were higher in November and may have included passage birds (see Pringle & Cooper, 1977). Avocets *Recurvirostra avosetta* were not recorded in March 1981 and no flamingoes were recorded in November 1978.

4 DISCUSSION

Counts made at the five islands are generally higher than those made by Cooper *et al.* (1980), but species composition is similar with the major exception of the black-necked grebe *Podiceps nigricollis* which was scarce in the bay during this survey. Most sightings of black-necked grebes at sea off the Atlantic coast of southern Africa have been made during mid-summer, though winter records do exist (Ryan, 1980). It appears

that most of the black-necked grebes had moved out of the area by March.

African black oyster-catchers were found breeding on all islands except Flamingo Island where breeding may be prevented by access of terrestrial predators and motor vehicles at low tide. The greatest breeding success of this species appeared to be at Seal Island where the density of adults was one bird per 21.4 m of shore. The count of 52 African black oyster-catchers at Halifax Island is less than half the number counted there by Cooper *et al.* (1980). It is likely that many of the oyster-catchers recorded by Cooper *et al.* were individuals that had flown across to roost on the island at high tide from the adjacent mainland: the habitat at Halifax Island is not suitable for supporting large numbers of breeding oyster-catchers. Cooper *et al.* (1980) recorded tidal fluctuations in the numbers of African black oyster-catchers at Pomona Island. The population of 249 African black oyster-catchers at Seal, Penguin and Halifax Islands is approximately 5% of the world population (Hockey, in prep.) and their conservation should be given serious consideration in the event of any management proposals for these localities. At present, all guano scraping has been halted.

Shark Island is currently being turned into a high intensity recreation area. During the years 1974–1977, an estimated 1000 Swift terns *S. bergii* bred there in a mixed colony with Hartlaub's gulls (Cooper *et al.*, 1977), and breeding was recorded in 1978 and 1980 (SAOS nest record cards). Swift terns were found breeding at Possession Island (27°01'S, 15°12'E) during March 1981 (pers. obs.) but there was no evidence of attempted breeding at either Shark Island or Halifax Island where breeding was recorded in 1976 (Cooper *et al.*, 1977). Halifax Island is not a regular breeding locality and breeding may have ceased at Shark Island due to disturbance. Although Hartlaub's gulls were holding territories at Shark Island in March, no breeding occurred (E. Mulder, pers. comm.). Only 914 Hartlaub's gulls were recorded at the islands, with a further 419 on the mainland, primarily at Lüderitz. This is well short of the estimated 2000 birds in the population in 1977 (Cooper *et al.*, 1977).

On the mainland, figures given by Cooper *et al.* (1980) differ in some respects from the findings of this survey. Counts of grey plover *Pluvialis squatarola*, ruff *Philomachus pugnax*, bar-tailed godwit *Limosa lapponica* and whimbrel *Numenius phaeopus* agree very closely between the two surveys, while counts of turnstone, ringed plover *Charadrius hiaticula*, curlew sandpiper, knot *Calidris canutus*, little stint *C. minuta*, sanderling *C. alba* and common sandpiper *Tringa hypoleucos* were much lower during the March survey, suggesting that these species had already migrated out of the area. Twice as many African black oyster-catchers and half as many white-fronted plovers *Charadrius marginatus* were recorded during the present survey. No greater flamingoes were recorded by Cooper *et al.* (1980) though they have been reported at other times, whereas

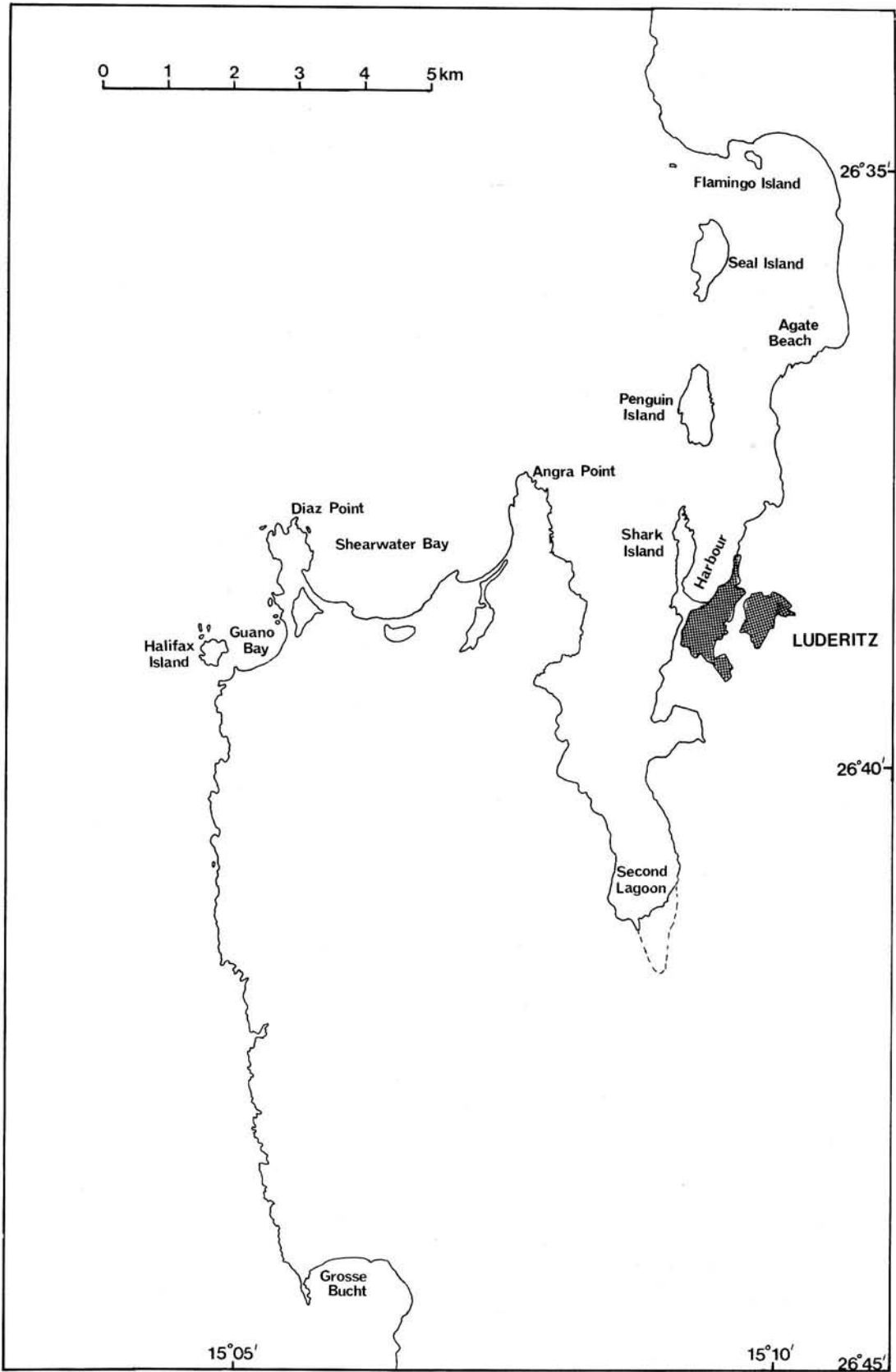


FIGURE 1: Map of the study area.

in March 1981 there was a total of 311 birds, of which 197 (63,3%) were in Lüderitzbucht.

The highest density of Palaearctic waders was at Grossebucht (one bird per 8,0 m). Grossebucht and the sandy bays between Diaz Point and Angra Point were the only areas where sanderling were common, contrasting with the findings of Cooper *et al.* (1980). In these two areas they estimated a total of 50 birds and counted 155 at Lüderitzbucht where none were seen during the present survey. African black oyster-catchers were distributed along all the rocky shores and three breeding pairs were located between Guano Bay (opposite Halifax Island) and Grossebucht. In conjunction with one pair found breeding at Shark Island during the survey these constitute the first published breeding records for the species in South West Africa since the offshore islands are politically a part of South Africa. Prior to these observations the most northerly breeding record was at the Olifants River Mouth (31°42'S, 18°11'E) (M. Walter *in litt.*). The Lüderitz shore is relatively undisturbed by virtue of its inaccessibility, and with a density of one oyster-catcher per 0,29 km, constitutes an important mainland locality for the species. The high density recorded at Grossebucht included a roost of 25 birds, many of whose origin was probably south of the area surveyed where the coast is rocky: this species gathers into communal roosts at high tide on the mainland and individuals may fly some distance to join these roosts (Hockey, *in press*). The overall density of 3,4 birds per km is greater than the 2,3 birds per km recorded in the south-western Cape, South Africa, where the species is abundant (Summers *et al.*, 1976, 1977).

The other resident wader species, the white-fronted plover, was common only in Shearwater Bay. This locality accounted for 36% of all curlew sandpipers and 47,5% of all sanderling counted. In previous years, Damara terns have been seen carrying food inland at Grossebucht, suggesting the presence of a breeding colony nearby (Cooper *et al.*, 1980). Two trips were made to the area in March, but no Damara terns were seen.

The Lüderitz Sewage Works supported the only populations of blacksmith plover *Vanellus armatus*, avocet *Recurvirostra avosetta*, little grebe *Tachybaptus ruficollis*, Cape teal *Anas capensis*, purple gallinule *Porphyrio porphyrio*, moorhen *Gallinula chloropus*, red-knobbed coot *Fulica cristata* and lesser flamingo *Phoenicopterus minor* in the Lüderitz area and is therefore an important locality in terms of increasing the bird species diversity of the area. Its use by waders is probably a function of water level. The yellow wagtail *Motacilla flava* recorded here during the survey was thought to be of the race *thunbergi* (grey-headed wagtail). This race has been recorded at Waterberg (South West Africa) and in Rhodesia, Transvaal, Mocambique and Natal between late October and early April (McLachlan & Liversidge, 1978; Clancey, 1980).

5 SUMMARY

Resident waders, primarily African black oyster-catchers, accounted for 57,9% of all waders on the islands and 25,3% of all waders on the mainland around Lüderitz. African black oyster-catchers were found breeding on the mainland south of Guano Bay, the first mainland breeding records for South West Africa. The most abundant Palaearctic waders on the mainland were turnstones, curlew sandpipers, sanderlings and grey plovers. At the islands, turnstones accounted for 77,7% of the Palaearctic wader populations.

Swift terns were not breeding at Shark Island in March 1981, probably due to disturbance caused by the construction of recreational facilities. Several species of water-bird occur in the Lüderitz region only at the Sewage Works and this therefore constitutes an important habitat.

6 ACKNOWLEDGEMENTS

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TABLE 1: Counts of waders (Charadrii) and other coastal birds at five islands near Lüderitz, March 1981

Island	Flamingo	Seal	Penguin	Shark	Halifax	Total
NON-PALAEARCTIC WADERS						
African black oyster-catcher <i>Haematopus moquini</i>	10	117	80	10	52	269
White-fronted plover <i>Charadrius marginatus</i>	9	0	0	0	0	9
Total	19	117	80	10	52	278
PALAEARCTIC WADERS						
Turnstone <i>Arenaria interpres</i>	62	60	29	6	0	157
Grey plover <i>Pluvialis squatarola</i>	1	0	9	5	1	16
Curlew sandpiper <i>Calidris ferruginea</i>	7	0	0	7	0	14
Knot <i>C. canutus</i>	0	2	0	0	0	2
Common sandpiper <i>Tringa hypoleucos</i>	0	1	1	1	0	3
Whimbrel <i>Numenius phaeopus</i>	1	0	2	4	2	9
Total	71	63	41	23	3	201
Total waders	90	180	121	33	55	479
NON-WADERS						
Grey heron <i>Ardea cinerea</i>	1	0	0	0	0	1
Kelp gull <i>Larus dominicanus</i>	13	383	248	68	108	820
Hartlaub's gull <i>L. hartlaubii</i>	7	131	14	750	12	914
Sandwich tern <i>Sterna sandvicensis</i>	6	0	0	0	1	7
Swift tern <i>S. bergii</i>	12	1	2	7	30	52
Cape wagtail <i>Motacilla capensis</i>	1	3	6	2	4	16
Total non-waders	40	518	270	827	155	1810
Total birds	130	698	391	860	210	2289

TABLE 2: Counts of waders (Charadrii) and other coastal birds on the mainland between Grossebucht and Agate Beach, Lüderitz, March 1981

Locality	Grosse- bucht	Grosse- bucht to Diaz Point	Diaz Point to Angra Point	Angra Point to Second Lagoon	Second Lagoon	Second Lagoon to Harbour	Harbour to Agate Beach	Total
Distance (km)	2,2	15,0	6,0	8,0	1,8	6,0	7,0	46,0
NON-PALAEARCTIC WADERS								
Black oyster-catcher <i>Haematopus moquini</i>	31	51	16	28	0	10	27	163
White-fronted plover <i>Charadrius marginatus</i>	3	17	57	8	17	10	5	117
Three-banded plover <i>Charadrius tricollaris</i>	0	0	0	0	0	0	4	4
Total	34	68	73	36	17	20	36	284
PALAEARCTIC WADERS								
Turnstone <i>Arenaria interpres</i>	160	42	25	39	14	42	25	347
Ringed plover <i>Charadrius hiaticula</i>	6	6	0	0	0	6	0	18
Grey plover <i>Pluvialis squatarola</i>	6	11	5	22	50	31	5	130
Curlew sandpiper <i>Calidris ferruginea</i>	20	91	122	16	66	23	1	339
Little stint <i>C. minuta</i>	0	0	12	0	1	0	1	14
Knot <i>C. canutus</i>	0	0	0	0	0	1	0	1
Sanderling <i>C. alba</i>	83	33	105	0	0	0	0	221
Ruff <i>Philomachus pugnax</i>	0	0	0	0	1	0	0	1
Common sandpiper <i>Tringa hypoleucos</i>	0	2	0	0	0	2	1	5
Greenshank <i>T. nebularia</i>	0	0	0	0	1	2	0	3
Bar-tailed godwit <i>Limosa lapponica</i>	0	0	0	0	4	1	0	5
Whimbrel <i>Numenius phaeopus</i>	1	6	2	6	7	12	5	39
Total	276	191	271	83	144	120	38	1123
Total waders	310	259	344	119	161	140	74	1407
Waders per kilometre	140,9	17,3	57,3	14,9	89,4	23,3	10,6	30,5
NON-WADERS								
Black-necked grebe <i>Podiceps nigricollis</i>	0	0	0	0	0	0	4	4
Grey heron <i>Ardea cinerea</i>	0	0	0	3	1	0	0	4
Great white egret <i>Egretta alba</i>	0	0	0	2	0	0	0	2
Little egret <i>E. garzetta</i>	1	0	0	1	2	5	1	10
Greater flamingo <i>Phoenicopterus ruber</i>	35	54	19	14	78	105	6	311
Cape shoveller <i>Anas smithii</i>	0	0	0	0	0	30	0	30
Shelduck <i>Tadorna cana</i>	0	0	0	0	1	0	0	1
Kelp gull <i>Larus dominicanus</i>	16	40	32	33	2	29	171	323
Grey-headed gull <i>L. cirrocephalus</i>	0	0	0	0	0	2	4	6
Hartlaub's gull <i>L. hartlaubii</i>	111	46	0	14	0	168	80	419
Sandwich tern <i>Sterna sandvicensis</i>	0	0	0	0	0	34	0	34
Swift tern <i>S. bergii</i>	6	0	0	0	2	9	2	19
Cape wagtail <i>Motacilla capensis</i>	9	34	8	14	9	4	11	89
Total non-waders	178	174	59	81	95	386	279	1252
Total birds	488	433	403	200	256	526	353	2659

TABLE 3: Counts of water-birds at Lüderitz Sewage Works: November 1978 and March 1981.

	30 Nov. 1978	6+19 March 1981
NON-PALAEARCTIC WADERS		
Three-banded plover		
<i>Charadrius tricollaris</i>	12	5
Blacksmith plover <i>Vanellus armatus</i>	7	8
Avocet <i>Recurvirostra avosetta</i>	10	0
Total	29	13
PALAEARCTIC WADERS		
Curlew sandpiper <i>Calidris ferruginea</i>	50	3
Little stint <i>C. minuta</i>	26	7
Ruff <i>Philomachus pugnax</i>	19	0
Common sandpiper		
<i>Tringa hypoleucos</i>	0	2
Wood sandpiper <i>T. glareola</i>	0	1
Total	95	13
Total waders	124	26
NON-WADERS		
Little grebe <i>Tachybaptus ruficollis</i>	16	0
Grey heron <i>Ardea cinerea</i>	0	2
Greater flamingo		
<i>Phoenicopterus ruber</i>	0	27
Lesser flamingo <i>P. minor</i>	0	41
Cattle egret <i>Bubulcus ibis</i>	0	1
Egyptian goose		
<i>Alopochen aegyptiacus</i>	2	0
Shelduck <i>Tadorna cana</i>	0	2
Cape shoveller <i>Anas smithii</i>	11	28
Red-billed teal <i>A. erythrorhyncha</i>	0	1
Cape teal <i>A. capensis</i>	117	41
Maccoa duck <i>Oxyura maccoa</i>	1	0
Purple gallinule <i>Porphyrio porphyrio</i>	1	0
Moorhen <i>Gallinula chloropus</i>	9	2
Red-knobbed coot <i>Fulica cristata</i>	8	10
Kelp gull <i>Larus dominicanus</i>	present	85
Hartlaub's gull <i>L. hartlaubii</i>	present	97
Cape wagtail <i>Motacilla capensis</i>	present	5
Yellow wagtail		
<i>M. flava thunbergi</i>	0	1
Total non-waders	165*	343
Total birds	289*	369

*not including gulls *Larus* spp.