



LANIOTURDUS

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Editorial

This special edition of *Lanioturdus* contains only three articles, all of a more scientific nature than most of the articles I have been publishing. I realize that these articles may not be everyone's cup of tea but I believe that it is important that they be published.

The first article on the Rockrunner, one of our near endemic birds, is by Julia Schweitzer who was studying at the University of Duisburg-Essen in Germany and who came to Namibia as a student specifically to make a

study (for a university project) of this species about which little is known. Julia received a small sponsorship from the Namibia Bird Club while she was here. Her work, which was written in German, was shortened for *Lanioturdus* and translated by Holger Kolberg. Should any reader be interested in the complete work (in German) it can be obtained from Holger (holgerk@mweb.com.na).

The second article by Tony Tree and Mark Boorman deals with wader numbers on the Namibian coast. The collection of the data for this article took place in 1998 and 1999. I believe that it is important to publish articles such as this as the data therein could serve as a base for comparison for any future similar study that may be done. In the article it is stated that numbers of Red Knots were in decline. I think that we will find that they have declined even further in the last decade while even in those days Common Redshank was regarded as a regular visitor to Mile 4 Saltworks where it is regularly seen today.

The final article by Thomas Göttert and others deals with the bird species recorded on former rangeland on the south-western boundary of the Etosha National Park and the use of birds as bio-indicators to assess the quality and structural complexity of the habitat.

This is the final edition of *Lanioturdus* for 2011. The committee wishes all members happy birding over the festive season and prosperous birding for 2012. The editor of *Lanioturdus*, of course, wants to hear about all those interesting goodies you see out there over the holiday period.

HOCKEY, P./W.R.J. DEAN/P.G. RYAN (2005): Roberts Birds Of Southern Africa. VIIth Edition, John Voelcker Bird Book Fund, Cape Town

SIMMONS, R.E. (1997). Rockrunner *Achaetops pycnopygius*. In: HARRISON, J.A. et al.: The Atlas of Southern African Birds. Vol. 2: Passerines. P.285 BirdLife South Africa, Johannesburg

Wader data collected on the Namibian coast in late January/March 1998 and February/March 1999.

A J Tree and M Boorman

During the 1999 tern expedition to the Namibian coast a limited amount of time was spent in observing, counting and ringing waders. None of the counts made was complete owing to the vastness of the area and the limited numbers of observers. Further, at both Walvis Bay and Sandwich Harbour there is a continuous movement of birds at both ebb and flow tides with the possible resultant omission or over-counting of certain species. Details of certain counts made at each of the major sites on different dates appear elsewhere in this report. Specific information on high tide wader roosts at Walvis Bay is difficult to obtain and there is much variation in this respect between neap and spring tides. There is a strong likelihood of substantial movements of waders between Walvis Bay and Sandwich Harbour and other parts of the coastline between extreme tidal periods.

The emphasis of this report is the collation of the data collected during ringing and observations making mention of the more important counts. Only four nights were spent attempting to mist-net waders in 1999 although a few birds were also caught whilst netting terns at the Mile 4 Saltworks. Small numbers were also caught using a whoosh-net and torch and hand-net. To give a fuller picture data is incorporated from that collected during the pilot survey of the same area during late January/April 1998 by the

authors. The ringing totals appear as two figures representing 1998 and 1999 respectively.

Wader ringing on this central section of coastline has occurred intermittently from the 1960s. Pre-1980 the major ringers concerned were Erwin Drygalla, Peter Becker, Tony Tree, Hu Berry, Derek Stanyard, Charles Clinning, Les Underhill, Dave Whitelaw and, more recently, Tim Osborne. The main species ringed were Curlew Sandpiper (1338), Ruddy Turnstone (334), Little Stint (254), Sanderling (209), Three-banded Plover (97), White-fronted Plover (77), Kittlitz's Plover (44) and Red Knot (38) (Underhill & Whitelaw 1977, H Kolberg pers. comm). Longer-term studies were carried out by Rod and Sigi Braby from 1987 to 1990 at the Hoanib River mouth and from 1992 to 1997 at Mile 4 Saltworks. Birds ringed during these two periods were mostly Curlew Sandpiper (858), Little Stint (272), White-fronted Plover (256), Chestnut-banded Plover (143) and Three-banded Plover (85) (R Braby pers.comm.). From 1996 to 2005 Mark Boorman and Sandra Dantu ringed waders intermittently at Mile 4 Saltworks and Swakopmund sewage works with a greater emphasis pre-1999. These were mostly White-fronted Plover (206), Curlew Sandpiper (178), Chestnut-banded Plover (153), Ruddy Turnstone (150) and Three-banded Plover (51). The older totals given in Underhill and Whitelaw (1977) referred only to palearctic waders and no figures were given for local species while Holger Kolberg's records are incomplete for these earlier days.

Moult data was recorded only for the primaries and assumption of breeding dress. Primary moult is shown as follows: 0 = old, 1 = freshly dropped or in pin, 2 = emergent from pin to 33% grown, 3 = 33-66% grown, 4 = 66-99% grown, 5 = new, 8 = intermediate. As the data is relatively limited weights have been categorized on a bimonthly basis, eg. February (1) indicates first half of that month.

Ageing of palearctic migrants in the Safring databank is as follows: 5 = juvenile (1 July to

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31 December); 6 = immature (1 January to 30 June); 7 = 2nd year (1 July to 30 June of the second year of life); 4 = adult (3rd year and older).

Reference is constantly made in the following report of the ornithological expedition to the Namibian coast in the summer of 1976/77 by the Western Cape Wader Study Group (Underhill & Whitelaw 1977) as well as to the biannual counts made at Walvis Bay from July 1997 to January 2005 by the late Keith Wearne and his team (Wearne and Underhill 2005) and citation of these references will not be made further.

Eurasian Oystercatcher *Haematopus ostralegus*



Photo: Eckart Demasius

One or two birds present annually at suitable sites, origins unknown. One was at north Sandwich Harbour on 28 January 1998 and was presumably the bird seen later at Walvis Bay Saltworks on 4/5 March. One was seen at Sandwich Harbour on 22 February 1999.

African Black Oystercatcher *Haematopus moquini* (3/0 ringed, 1 controlled)



Photo: Eckart Demasius

Walvis Bay is an important nursery area and staging post for young Black Oystercatcher, with a peak summer count during 1997-2005 of 169, while small numbers may be found at other sites. The first proof of the provenance of these birds came from a bird mist-netted at Mile 4 Saltworks on 8 February 1998 that had been ringed at Knysna, southern Cape, as a pullus on 26 December 1996. The highest count in 1998 was of 107 at Walvis Bay Saltworks on 1 February. In 1999 ringed birds were seen as follows: 9 February, out of 105 birds present (highest count) four bore colour rings from Saldanha Bay, W Cape, and three had metal rings only. Of 12 present another Saldanha Bay bird was seen at Mile 4 Saltworks on 5 March, while one had a metal ring only; one of three on 13 March had been ringed on Dassen Island, W Cape, and one ringed between Cape Point and Breede River, W Cape, seen on 21 March at Walvis Bay Saltworks. All colour-ringed birds had been caught as pulli in either 1997/98 or 1998/1999 seasons.

Common Ringed Plover *Charadrius hiaticula*.



Photo: Eckart Demasius

The majority are confined to Walvis Bay and Sandwich Harbour where they spread out over the vast wet flats and are difficult to count. A spring tide roost occurs on the extensive shallowly flooded area on Pelican Point where a total of 390 was estimated on 3 March 1999. The median of January counts at Walvis Bay is 499 with a peak estimated at 4 545 for the entire tidal lagoon area. This peak count is unlikely and may result from duplicate counting by the different teams. Numbers are much lower at Sandwich Harbour with a peak

of 130 on the south flats on 29 January 1998. The summer 1976/77 count gave a total figure for the entire area of only about 350 birds. The origins of this population are not known.

White-fronted Plover *Charadrius marginatus*. (50 & 28 ringed, 1 recovered, 5 controlled, 1 recaptured).



Photo: Neil Thomson

The White-fronted Plover is a common resident at all coastal habitats with the greatest numbers found at Walvis Bay, especially around Pelican Point. This plover is probably under-recorded in many counts owing to its scattered and often inconspicuous behaviour. Birds were caught mainly in mist-nets, with torch and hand-net or as pulli. Biannual counts made at Walvis Bay show a summer peak of 2 277, with a median of 1 215, and a winter peak of 3 100. Sandwich Harbour may have in excess of 1 000 birds (R Braby pers. comm.). A total of 2 800 for the entire area was estimated in summer 1976/77. Considerable concentrations may occur at the end of the austral summer (MB).

Clancey (1975) states that birds found on the Namibian coast belong to the grey nominate race, *marginatus*, which he gives as occurring from Cape Agulhas northwards to Angola. AJT has handled considerable numbers of this race, as well as the form *arenaceus* that occurs eastwards from Cape Agulhas through to southern Mozambique, and can confidently state that the birds that we found as far south as Sandwich Harbour are quite different from nominate *marginatus* and most closely akin to *arenaceus*. *C.m.marginatus* has sandy-grey

upperparts while that of *arenaceus* is warmer sandy-brown, the feathers edged with a varying amount of rusty. Birds along the coastline varied from some extremely rusty individuals through to the norm of sandy-brown. The resident birds are thus treated as *arenaceus*-type until further detailed taxonomic work is carried out. Only one grey individual was caught, at Walvis Bay on 10 February 1999, being aged as 6-12 months old. This was very likely a wandering *marginatus*. The small race, *mechowi*, occurring on sand rivers in the interior normally occurs seasonally in the extreme north of Namibia with scattered out-of-season records inland to the south ascribed to this race (Tree 1997). A bird caught at Mile 4 Saltworks on 8 February 1998 was the first of this form to be recorded on the coast.

All of the controlled birds had been ringed as pulli in the general area of Mile 4 Saltworks in the years 1993 to 1997. One control gives an indication of the age at which breeding may occur: F46833 was ringed as a pullus on 25 January 1997 at Mile 4 Saltworks and recaptured as a breeding female with a newly hatched pullus on 4 February 1998, within two kilometres of place of original capture. A pullus ringed at Pelican Point in February 1998 was killed seven months later by a vehicle 11 km away in Walvis Bay.

On this equable coastline and especially in the shelter of the large lagoons and saltworks breeding may occur at any time of the year, with a strong summer peak, giving rise to problems of ageing of individuals caught and it is most likely that moulting birds may be found in any month of the year. It is not known if individuals breed seasonally or whether they may breed throughout the year or at different times of the year. Breeding was active in February/March and 29 pulli were ringed.

Details of wing length and mass are shown in Table 1 for each of the three races recorded. As the sample of known age/sex birds is limited it is considered prudent to lump the measurements of both sexes except in the case of the frons bar (not always the most

accurate measurement as the rear of the bar may be irregular in shape). From personal work carried out elsewhere there appears to be little sexual dimorphism in measurements in this species. Ageing and sexing can be difficult as a small proportion of adult females of both *arenaceus* and *marginatus* may not acquire the frons bar (AJT). In juvenile plumage the pale edging to the lesser coverts carries through in a declining degree in the immatures but becomes increasingly difficult to determine with age. Once these feathers are worn or lost it is impossible to separate immatures from females lacking the frons bar. Furthermore, the acquisition of the frons bar in the sub-adults may be slow and may also overlap poorly developed bars of some females. In adult males the frons bar is well developed and deeper than that of the female as well as being pure black, whilst that of the female is diffused with a few paler brownish feathers. There is very likely an overlap in the depth of the bar between the two sexes therefore we have wavered on the cautious side and treated only birds with a frons bar of over 7.0 mm as males whilst the best developed known female had a bar of 6.3 mm in depth. There is also the possibility that the depth of the frons bar may increase slightly by second adult moult (AJT).

Primary moult and wear showed enormous variation and is indicative of breeding throughout the year although also showing the likelihood of breeding peaks. Only detail of primary moult was recorded. Adult birds (n=39) showed primary feathers in the following categories: old (n=12), intermediate (n=18), fresh (n=2), active (n=5, with scores of 14 to 45). Two birds showed suspended moult (5555555550 and 8800000000).

Juveniles/immatures were just as variable with old (n=3), intermediate (n=3), fresh (n=1), active (n=4, with scores of from 1 to 40). Three known age birds were recorded with two of a year old showing intermediate wear feathers and a bird of 2 years 4 months showing all feathers old.

The single *marginatus* handled showed all

intermediate wear primaries and the late dry season breeding *mechowi* had a moult score of 43.

Table 1				
Measurements and mass of White-fronted Plover in Namibia, February/March 1998/1999.				
C.m.arenaceus				
	No	Range	Mean	SD
Mass (adults)	36	42.4-54.0	45.9	2.61
(Imms/juvs)	14	41.0-48.9	45.4	2.35
Wing (adults)	36	102-115	111	2.76
(Imms/juvs)	14	102-112	109	3.14
C.m.marginatus				
Mass (imm)	1	51.0		
Wing (imm)	1	110		
C.m.mechowi				
Mass (2y F)	1	40.8		
Wing (2y F)	1	102		

Kittlitz's Plover *Charadrius pecuarius*.



Photo: Eckart Demasius

Generally sparse and in 1999 only recorded by the small lagoon at the mouth of Swakop River: 29 on 5 March built up to 48 by the 20th. Two were at Mile 4 Saltworks on 24 January 1998. Numbers recorded at Walvis Bay during 1997-2005 never exceeded 24.

Chestnut-banded Plover *Charadrius pallidus*.
(15/3 ringed, 1 recaptured)



Photo: Eckart Demasius

Walvis Bay and Sandwich Harbour represent the major off-season resorts for the nominate subspecies of this tiny plover which breeds mainly at the major salt-pan complexes of Etosha and Makgadikgadi in Namibia and Botswana respectively. Varying small numbers breed at the saltworks along the coast. The largest counts made on the section of coast, incorporating Sandwich Harbour, Walvis Bay and Mile 4 Saltworks, Swakopmund, gave a potential peak of between 9 000 and 10 000 birds in recent years (K Wearne *in litt*), which must comprise over 90% of the entire population of the nominate race. These peak figures tend to fluctuate over a period of years dependent on the availability of suitable breeding habitat and the total population visiting this coastline may drop to as low as <5 000 birds. For instance, in summer 1976/77 a total of about 4500 was estimated. For Walvis Bay a peak summer figure of 8 428 was made during 1997-2005, with a median of 2 284. If rains in the interior are good then virtually the entire population may move inland.

During February 1998 there was a major movement away from the coastal areas leaving few birds behind although small parties would move in and out of the area. Numbers were very low in February/March 1999. Of the total of 18 new birds captured one was a pullus, two were adult males with the balance adult females. An adult female captured at Mile 4

Saltworks on 3 March 1998 was recaptured at the same site on 7 March 1999. No birds showed active moult.

Three-banded Plover *Charadrius tricollaris*



Photo: Eckart Demasius

Recorded in small numbers mainly at the sewage works of Swakopmund and Walvis Bay and at the mouth of the Swakop River. Going by earlier ringing records there must be considerable turnover of this species at all sites and there is an old recovery of a bird ringed at Windhoek in November 1966 and recovered at Swakopmund in January 1969 (Tree 1980, Underhill *et al* 1999).

Lesser Sand Plover *Charadrius mongolus*



Photo: Eckart Demasius

A first year bird was present on the beach by Walvis Bay Saltworks on several dates in March 1999. There are two other records for January 1998 and January 2002.

Grey Plover *Pluvialis squatarola* (5 & 12 ringed).



Photo: Eckart Demasius

A common non-breeding visitor found along all shorelines. This bird is probably often under or over-represented in counts at Walvis Bay (with a 1997-2005 midsummer peak of 2 598 and a median of 1 120) as it is one of the species that moves around extensively during ebbing and flowing tides. The largest high tide concentrations noted were of 530 on the "island" at Walvis Bay on 17 February 1999 and 670 at Meersig on the 19th. At Sandwich Harbour 770 were counted on the north and south sections over 28/29 January 1998. In summer 1976/77 an overall total of 4 500 was realised of which 2 437 were counted for Walvis Bay and 900 for Sandwich Harbour while the balance was found along the open beaches. The small number ringed was unlikely to be representative although it was of interest that only one first year bird was handled.

As there is only slight sexual dimorphism in this species a small sample such as this is not suitable for further analysis and it is very difficult to determine origins based on such mensural data unless sex is determined. It has been suggested that South African birds come from the Gydan Peninsula and eastwards. Biometric data was incorporated into Serra *et al* (2001).

Moult: all adults had either completed remige moult or were in the final stages. Single birds still in late stage primary moult on 7 February had score of 49, on 12 March (score 47 and

49); a first year bird on 21 March retained only old feathers despite showing a weight in the same range as those of adults.

Blacksmith Lapwing *Vanellus armatus*



Photo: Eckart Demasius

Odd pairs at the sewage works. Small numbers recorded at Walvis Bay with a summer peak of 12 (Wearne & Underhill 2005).

African Wattled Lapwing *Vanellus sengallus*



Photo: Eckart Demasius

A most unexpected record was of an immature at the Walvis Bay sewage ponds on our arrival in late January 1998. It had been present for a while and was still present on our departure in early March. The nearest known population may be found far to the north-east on the Caprivi Strip.

Ruddy Turnstone *Arenaria interpres* (39 & 131 ringed; 1 visual control (colour rings), 4 recoveries (local), 1 recapture, two observations of Polish and Finnish rings).



Photo: Eckart Demasius

The Ruddy Turnstone is the third commonest palearctic wader on the section of coast from Walvis Bay to north of Swakopmund. Oversummering (austral) numbers are heavily supplemented by migrants from further south, from January onwards. Recent findings suggest that both Siberian and Nearctic birds visit Namibia and that a loop migration exists for a proportion of the former with birds migrating south along the east coast with many moving on to the west coast to refuel prior to migrating north again. A bird ringed in January at Swakopmund was caught 3 years 9 months later in Algoa Bay, Eastern Cape Province. (Underhill *et al* 1999). Two birds whose rings were partially read in the field in 1999 had been ringed in Finland and Poland. The first indication that Nearctic birds visit southern Africa was the sighting of a colour ringed/flagged bird (with one colour ring missing) seen on the rocky shore by the Mile 4 Saltworks on 7 March 1999. This bird was traced to one of nine males ringed at Alert on Ellesmere Island, Canada, in the summer of 1996. It was seen annually at the same site up to the 2005/06 season. Of the local recoveries, three were at the site of ringing, birds appearing to have succumbed from toxic poisoning as quite a few unringed dead birds were also found at the same period. Two of the recoveries were from the same season and one had been ringed a year earlier. The fourth bird was recovered, freshly dead, 429 km north along the coast at the Hoanib River mouth a year and a half later, on 21 September 2000,

and was presumably still on southward migration. For fuller details of migrations of the Ruddy Turnstone in southern Africa refer to Underhill *et al* (1999).

The summer 1976/77 count gave a total of 7 700 birds in the Walvis Bay/Swakopmund area, a 45-50 km stretch of coastline and this number may well rise substantially during February and March when numbers are swollen by migrants from further south. Avidly feeding flocks are to be found all along the open coast as well as in the outer lagoon at Walvis Bay. At this latter site 1 170 birds were counted on 9 February 1999 on 400 m of shore at a low spring tide feeding frenzy, while at the same locality on about 4 km of shore 2 950 were estimated on 3 March. Small numbers, maximum 473 and median 306, may be found in Walvis Bay during the austral winter (Wearne & Underhill 2005) but no coastal counts have been made at this time. Irregular pre-roost gatherings of Ruddy Turnstone occurred at Mile 4 Saltworks with the largest, of 560, on 23 March. Numbers varied on a given stretch of shoreline on a daily basis; for instance from a series of 14 counts made along a 1.5 km stretch of rocky and sandy beach at Langstrand between 15 February and 2 April numbers ranged from 37 to 332 with peaks of over 150 birds on 25/26 February and 9,15 and 25 March. Most counts were made at low tide, with one at mid-tide and two at high tide; the high tide counts were below 50 birds as were three at low tide. On a walk from the guano platform to Langstrand (about 6 km) on 22 March, 640 were counted. From 15 February to 24 March seven counts made along the entire shoreline between Swakopmund and Langstrand (about 14 km) gave totals of 72 to 212 birds until mid-March when there were 625 on the 15th and 453 on the 24th (F Arts *pers. comm.*).

Of the 170 new birds handled 80.6% were adult, 11.2% presumed 2nd year and 8.2% 1st year. It is assumed that the majority of immature birds remain in their non-breeding quarters and that this central Namibian coastal zone is used primarily as a pre-migratory fattening site.

Biometrics are shown in Table 2. As birds are now known to be of mixed origin it is impossible to assign these measurements to any one population. Some of the largest birds may have been assignable to *A.i.morinella* from north-east Canada. Adult males and females were only sexed when in full breeding plumage and the characteristics clear-cut. Some individuals appeared intermediate in plumage and may have been second year. Noticeable second year birds may have been ones that will overwinter for a second season and were often late moulters or had assumed only limited partial breeding plumage. The heaviest bird, an adult female at 146 g, was considered to be a through migrant from further south as it already showed very slight wear on the primaries.

Moult. Active moult of one or two outer primaries occurred in a proportion of adults, shown on a half-monthly basis, as follows: February (1) 83%; February (2) 33%; March (1) 22% and March (2) 3%. The late moulters may have been 2nd year birds. Presumed 2nd year birds (n=14) displayed a variety of moults from showing all intermediate wear feathers from the first post-juvenile moult, to early stage second moult, to late stage second moult to complete (15 March the earliest). One bird had suspended first moult, this recorded as 8888800000. First year birds (n=19) showed a wide range of moult from all old feathers (n=9) to various stages of active moult up to a score of 38 (n=6). Two birds showed suspended moult with scores of 10 (26 February) and 30 (31 March). Two birds showed irregular moult between wings with (a) 0015511000 (left) and 0000010000 (right) and (b) 0000550000 (left) and 5555554310 (right).

(adults)	MM	49	23.7-27.9	25.4	0.87
	FF	39	24.1-28.0	25.9	0.91
THL	All	31	47.5-53.3	50.4	1.51
Mass	Adults (Feb)	22	85.5-114.0	97.4	6.65
	(Mar 1)	33	86.0-137.0	103	9.35
	(Mar 2)	72	95.0-146.0	115	9.2
	2nd year (Feb)	2	94; 108.5		
	(Mar)	10	92.5-109.0	99.9	5.67
	1st year (Feb)	5	90.0-102.0	103	10.3
	(Mar)	15	85.5-104.5	95.2	5.34

(THL = Total Head Length – Ed).

Red Knot *Calidris canutus* (3 & 18 ringed)



Photo: Neil Thomson

This species has declined significantly as a visitor to southern Africa where found mainly along the west coast as far south as Langebaan Lagoon in the Western Cape (AJT and LG Underhill pers. obs.). Although small numbers (mid-summer, 1997-2005, Walvis Bay peak 844, median 61) over-summer at Walvis Bay and Sandwich Harbour and on suitable sections of coastline, the area is also used as a pre-migratory fattening station by birds departing from further south, eg. a party of 580 was at the Meersig, Walvis Bay, on 1 March 1998. This may be compared with the mid-summer figure of 4 000 estimated for 1976/1977, being broken down into 1 100 for Walvis Bay, 600 for Sandwich Harbour and 1 800 for the mixed shoreline from Walvis Bay to north of Swakopmund. Few birds were found along this stretch of coast in 1998 or 1999. There is one old record of interchange between Walvis Bay and Langebaan Lagoon involving a bird ringed at the former site on 8 February 1971 and controlled at the latter site on 28 December 1975 (AJT). The breeding provenance of this small population is unknown but there has been interchange of

Table 2.					
Measurements and mass of Ruddy Turnstone in Namibia, February/March 1998/1999					
		No.	Range	Mean	S.D.
Wing	All	127	147-165	156	3.58
(adults)	MM	48	147-164	155	3.58
	FF	39	151-165	158	2.98
Culmen	All	159	19.4-25.9	21.8	1.12
(adults)	MM	51	19.4-22.0	21.4	0.97
	FF	40	20.5-24.0 (25.9)	22.4	1.04
Tarsus	All	126	23.7-28.0	25.7	0.86

ringed birds between Langebaan Lagoon (all but one) and Mauritania, coastal Portugal through to Norway, a few in the Baltic and one to the east of the White Sea in Russia (see Underhill *et al* (1999) for fuller details). It is likely that birds originate from the general region of the Taimyr Peninsula.

The small numbers ringed in Namibia add a little to the data already collated for 1976/77 but much larger samples are needed over a more protracted period. Of the 21 ringed there were 12 adults, 4 x 2nd year and 5 x 1st year. Measurements of wing, culmen, tarsus and weight are presented in Table 3. There is little difference in the mean of adult weights with that for mid-summer given by Underhill & Whitelaw (1977) indicating that pre-migratory fattening was only beginning in March. The mass of first year birds averaged lower than that of mid-summer.

All adults handled during March had completed primary moult and had assumed varying stages from 20-90% nuptial plumage. Second year birds showed variation from all new to all intermediate with one active (5488832188). One bird, assumed on plumage to be in its 1st year but may have been a retarded 2nd year bird, had a score of 5500005542. All other 1st year birds had only old primaries.

Curlew Sandpiper *Calidris ferruginea*. (208 & 60 ringed. 3 recaptures)



Photo: Eckart Demasius

By far the commonest wader in the region with possibly between 40 000 and 80 000 birds present annually at all wetlands combined, but mainly Sandwich Harbour and Walvis Bay (where summer maximum of 44 250 1997-2005) (Simmons 1993, Wearne & Underhill 2005 and Rod Braby pers. comm.) but tighter roost counts are necessary to determine the true total. This is a significant increase on the figure of 20 000 estimated for summer 1976/77. The totals will vary considerably from year-to-year dependent on breeding success and, probably, the availability or lack of suitable habitat inland. Considerable interchange between all sites is likely. The largest single count made was of 6 950 at the flooded pan on Pelican Point on 17 February 1999 during high tide. There is some indication of age separation with first year birds restricted to differing feeding habitats such as the saltworks; the good weights of these birds indicate that these habitats are not sub-optimal. Adults are proportionately commoner at the tidal lagoons but more continuous data is necessary to substantiate this premise. Despite considerable ringing of birds on both the south-western Cape and Namibian coastlines there has only been one recorded interchange of a ringed bird between these two major resorts. This bird was captured on similar dates in September two years apart. The only long-range ring recoveries affecting Namibia are of a bird ringed at Walvis Bay in December 1975 and recovered in the Central African Republic in June 1976 and a Belgian bird ringed in September 1978 and controlled in Walvis Bay in December 1979. Two further birds were recovered on the Black Sea, one ringed

Table 3.

**Biometrics of Red Knot in Namibia
January/February 1998/1999**

	No.	Range	Mean	SD
Wing (adult)	12	167-178	173	3.42
(2nd year)	3	163-171	166.5	
(1st year)	5	157-165	162.5	3.29
Culmen	21	33.4- 39.1	35.3	1.66
Tarsus	21	30.8-36.7	32.8	1.42
Mass Adults - March (1)	10	119-163	136	12.6
Adults - March (2)	2	164, 174		
2y - February	1	116		
2y - March (1)	3	110-135	122.8	12.29
1y - February	2	128, 136		
1y - March	3	117.5-123	120	3.0

November 1977 and recovered August 1980 and the other ringed March 1980 and recovered August 1982 (Underhill *et al* 1999). There may be a partial loop migration with some populations moving down the east coast and summering on the west coast (AJT) and Namibian birds may be a mixture of these, west coast and overland migrants. As an indication of the rapidity of movement between sites along this section of coastline a Curlew Sandpiper ringed at Swakopmund on 3 January 1977 was controlled 80 km south at Sandwich Harbour on 7 January.

The Curlew Sandpiper is one of the best-studied palearctic waders in southern Africa and no new data was obtained. However, as there appears to be variation in timing of departure of the different sub-populations in the region data on mass (Table 4) and moult (Table 5) are presented here for reference purposes. Mass gains appear to occur later than those of the south-west coast of Africa (AJT) and note how males are apparently increasing mass faster than females in the latter half of March presumably for a slightly earlier departure. Moult appears to vary little within southern Africa. It is impossible to separate advanced second year birds from adults at this time of year but more retarded birds may be separated with some confidence. Assumption of breeding dress starts in late January, by February (1) 20% were showing <40% nuptial plumage; February (2) 70% were showing up to 60% nuptial; March (1) 60% handled were showing <50% nuptial and by March (2) all birds showed between 10% and 100% nuptial. The lower progressive figure in first half March may have indicated more 2nd year birds handled. Birds that could be identified as 2nd year appeared to assume nuptial plumage only from the second week of March. Assumption of breeding colours occurred during final stage or just after completion of primary moult.

Table 4					
Curlew Sandpiper mass - Namibian coast					
February/March 1998 and 1999					
		No	Range	Mean	SD
February (1)	Ad M	16	50.0-62.5	57.7	3.45
	Ad F	15	52.0-62.5	58.5	2.79

	1y M	34	49.0-66.0	56.8	4.01
	1y F	34	54.0-70.0	59.9	3.91
February (2)	Ad M	17	50.0-63.5	56.8	3.63
	Ad F	20	53.0-70.0	61.3	4.16
	1y M	6	48.5-58.0	53.2	4.01
	1y F	2	59.0, 63.0		
March (1)	Ad M	15	52.5-70.0	60.2	5.97
	Ad F	9	52.5-68.0	61.4	5.11
	1y M	1	58.0		
	1y F	2	46.0, 65.0		
March (2)	Ad M	11	64.0-92.0	75.7	7.78
	Ad F	8	60.0-82.0	67.9	5.5

Table 5		
Primary moult in the Curlew Sandpiper in Namibia, February/March 1998/1999		
Month	Age	Comments
February (1)	Adult M (16)	87.5% actively moulting outer one or two primaries
	Adult F (15)	86.5% actively moulting outer one or two primaries
	2y M/F (8)	Many showing fresher outer feathers from late post juvenile moult.
		from 5-9 new feathers with 1-3 active feathers following. One with 2555225555.
	1y M/F (87)	All old (29), inner 3 (1), 4 (7), 5 (31), or 6 (15) old with 1-3 following
		A very few birds start as above and then moult one or more inner feathers eg.
		0243100000, 2002210000. Rarely is moult started with inner primary (2).
February (2)	Adult M (15)	73.3% complete, remainder just completing outer primary.
	Adult F (21)	61.9% complete, remainder outer primary active (4), two outer active (3) and three outer active (1).
	2y M/F (3)	Inner five or six new, following one active, rest old.
	1y M/F (10)	All old (1), inner 3 (2), 4 (1), 5 (3) or 6 (3) old with following 1-3 active
March	Adult M	100% complete
	Adult F (7)	77.8% complete, remainder 7 or 8 feathers new, 1-2 active.
	2y M/F (2)	Complete (4), one with 8 feathers new, ninth active.
	1y M/F (6)	All old (3), inner 3-6 (1 each) old, followed by 1-4 new, following feather active.
March (2)	Adults/2y (27)	All new.

Sanderling *Calidris alba*. (0 & 58 ringed, 1 visual control (colour rings), 1 control).



Photo: Eckart Demasius

Although considered to be the commonest wader in the 1976/77 survey, slightly outnumbering the Curlew Sandpiper, recent counts show it to be the second commonest (Keith Wearne, Rod Braby pers. comm.). A summer maximum of 15 170 birds was recorded during the 1997-2005 counts at Walvis Bay. As with all mobile waders actual totals are difficult to obtain. However, the stretch of coastline between Walvis Bay and Swakopmund is not counted nowadays in the biannual counts and that is where a third of the birds were recorded in 1976/77 when an overall total of 24 000 was estimated, this probably standing the test of time. The Sanderling is a highly mobile species within the area as indicated by concentrations on Pelican Point. On 9 February some 2 300 birds were estimated in a low spring tide feeding frenzy on 600 m of shoreline and on 3 March there were 3 700 birds at a high tide roost on the extensive shallowly inundated section of Pelican Point. At other times numbers were much lower in that area.

All birds were caught in the last three weeks of March and only two (3.5%) were identified as in their first year. In 1976/77 26% of birds caught in cannon nets and 38% of mist-netted birds were in their first year. All of our birds were mist-netted but were caught on Pelican Point whereas the earlier birds were caught on the open beaches. As with the Curlew Sandpiper there may be a degree of age separation in the different habitats.

The origins of the birds visiting this coastline have now been established (for full details see Underhill *et al* 1999). Many of the Siberian birds appear to have a loop migration moving south along the east coast of Africa and returning along the west coast before cutting across Africa, presumably at the Gulf of Guinea. The capture of an Icelandic ringed bird and the sighting of an individually colour-ringed British bird (considered to be of north-west origin) helped to establish the fact that birds from the Nearctic also occur this far south. This section of coast appears to be of enormous importance as a pre-migratory fattening station for this and other species.

Details of biometrics collected appear in Table 6. The wide range of measurements is probably indicative of mixed populations (see Cramp 1983 and Soloviev & Tomkovich 1995).

Moult: of adults caught in the period 10/31 March, 71% had completed primary moult and the remainder were active/old on the last three primaries. These late moulters may have been 2nd year birds. The only birds to show indications of nuptial dress were caught on the 31 March, one with 20% and the other with >60%. Two 1st year birds caught 12/13 March had moult scores of 36 and 39.

Table 6				
Biometrics of Sanderling from Namibia, March 1999				
	No	Range	Mean	SD
Wing. Adult - fresh	40	120-134	128	2.76
1y - old	1	120		
Culmen (all)	58	20.8-27.9	24.9	1.38
THL (all)	58	48.4-53.9	50.5	1.26
Tarsus (all)	58	22.5-27.5	24.9	1.09
Mass. Adults-Mar (1)	47	48.0-68.5	59.2	5.55
Adults-Mar (2)	9	53.0-71.0	61.2	6.59
1y - March (1)	2	50.5,52.0		

Little Stint *Calidris minuta* (7 & 2 ringed).



Photo: Eckart Demasius

The fourth commonest palearctic wader with main concentrations at Walvis Bay and Sandwich Harbour and lesser concentrations at the saltworks; rare on the open coast. A total of 2 500 was estimated for the entire area in 1976/77 but AJT has individual counts in earlier years at Walvis Bay of up to 5 000 on occasion. Mid-summer Walvis Bay counts show a peak of 11 600 and median of 5 843. Their occurrence in numbers on the coast may be determined by the amount of habitat available inland. The highest single count made was of 1 250 at the Pelican Point pan on 17 February 1999 during high tide. Of the seven birds ringed five were adult and two were 1st year and all were caught in February. Weights ranged from 20.8 to 25.3 g, normal for the time of year. Three adults had completed primary moult, two had moult scores of 30 and 40; these latter may have been in their 2nd year. The 1st year birds had scores of 22 and 27.

White-rumped Sandpiper *Calidris fuscicollis*

An adult in partial breeding dress at Sandwich Harbour on 30 January 1998. Seen by AJT and Phil Hockey.

Ruff *Philomachus pugnax* (5 & 0 ringed)



Photo: Eckart Demasius

Occurs in small numbers at saltworks and sewage ponds. The largest concentration noted was 54 on 1 February 1998 at Walvis Bay Saltworks where mid-summer counts indicate a peak of 434, but with a median of 47 indicating normally low counts. Birds were caught in early February and weights ranged from 96.0-106.5 g (ff - 2 Ads, 1x2y and 2x1y). The adults had completed primary moult, the 2y had a moult score of 39 and the 1st year birds had standard southern African moults of 0000003200 and 0000000310 (Tree 1974).

Terek Sandpiper *Xenus cinereus*

Generally a rare bird this far north on the west coast and normally only seen in ones and twos at Walvis Bay, where up to seven have been recorded (eg. 4 March 1998 - AJT).

Common Sandpiper *Actitis hypoleucos*



Photo: Eckart Demasius

Very sparse, found mainly at sewage works (nine at Swakopmund on 28 February 1998) with a few on rocky sections of the shoreline.

Common Redshank *Tringa totanus*



Photo: Eckart Demasius

Now considered a regular visitor in very small numbers to this section of the Namibian coast (MB). From one to three birds seen through the 1998 visit at Mile 4 saltworks. An adult in full breeding dress was present on 2 February. Singles seen on two occasions at Walvis Bay during March. In 1999 there were three at Mile 4 Saltworks on 6 February, with singletons thereafter, and one at Meersig, Walvis Bay, on 12 February. These birds appear to be nominate *totanus*.

Common Greenshank *Tringa nebularia* (8 & 0 ringed)



Photo: Neil Thomson

A total of 180 was estimated for all sites in 1976/77, the largest number of 120 found mainly in the brackish pools at Sandwich Harbour. This latter habitat is now seriously diminished. Mid-summer Walvis Bay counts show a peak of 421 and a median figure of 177 but duplication of counts could occur as this species tends to move around a lot during the inter-tidal period. Numbers were low in 1998/99 with peak counts of 63 on 2 March 1998, 47 on 6 February 1999 at Mile 4 Saltworks, and 50 at the Walvis Bay Saltworks on 1 February 1998.

All birds were handled between 4 February and 3 March and all but one, a 2y bird, were adult. The early February bird weighed 162 g while the late February/early March birds weighed 170-193.5 g (mean 183.7 g) and were still in the early stages of pre-migratory lipid build-up. The early February bird still had

active moult of the outer two primaries while the remainder had completed remige moult.

Marsh Sandpiper *Tring stagnatilis* (2 & 0 ringed)

A sparse visitor to the saltworks and sewage works. A grand total of 17 counted in 1976/77. In 1998/99 the peak counts were 34 on 2 February 1998 at Mile 4 Saltworks and 54 on 28 February 1998 at Walvis Bay Saltworks. In 1999 numbers were much lower with peaks of 12 on 6 February and 26 on 9 February at Mile 4. An adult in full breeding dress was at the Meersig, Walvis Bay, on 22 March 1999.

The two birds ringed were both adults and weighed 75 & 84.5 g on 3 February. Both had completed remige moult.

Wood Sandpiper *Tringa glareola*



Photo: Eckart Demasius

Uncommon on the coast. The only birds recorded were three at Sandwich Harbour freshwater seep on 27 January 1998, four at the Swakop River mouth on 21 February 1998, and a singleton at the same site on 5 March 1999.

Black-tailed Godwit *Limosa limosa*

A rare visitor to the west coast. Three were seen at Sandwich Harbour on 28 January 1998.

Bar-tailed Godwit *Limosa lapponica* (0 & 3 ringed)



Photo: Eckart Demasius

Walvis Bay and Sandwich Harbour, together with Langebaan Lagoon in the Western Cape, are the only localities in Namibia and South Africa of importance for the Bar-tailed Godwit. The total estimate in 1976/77 for this species on the Namibian coast was about 2 200 birds. Mid-summer Walvis Bay counts vary with a peak of 1 970 and a median of 648 (Wearne & Underhill 2005). There is probably much commuting between Walvis Bay and Sandwich Harbour in this species. Our peak counts were 465 at Sandwich Harbour on 28/29 January 1998, 456 at the Meersig, Walvis Bay, on 28 February and 300 at Walvis Bay Saltworks on 21 March 1999. There is one record of a juvenile ringed in north Italy on October 1991 recovered north of Swakopmund on 7 February 1992 and there are more recent sightings of two individually colour-ringed birds from the Netherlands, seen at Walvis Bay and Sandwich Harbour. These latter, and possibly the former, all indicate that a portion, at least, of these west coast visitors passes through the Wadden Zee on migration and are probably from a more westerly population.

The three birds ringed were caught on 12 March: two were 2nd year and one an adult. Birds were sexed on bill length: the male was 76.5 mm and the females 86.7 and 88.6 mm. The 2 y male weighed 250 g and the females weighed 307 and 310 g. All birds had completed remige moult. The adult female was in full breeding plumage.

Common Whimbrel *Numenius phaeopus*



Photo: Eckart Demasius

A poorly represented species in the area. The 1976/77 survey indicated a total of about 160 birds. If anything numbers were lower in 1998/99 and the peak counts were 32 at north Sandwich Harbour on 28 January 1998 and 40 at the Walvis Bay Yacht Club on 8 February 1999. Both concentrations were high tide roosts. Mid-summer counts, 1997-2005, at Walvis Bay showed a peak of 72, median 27.

Eurasian Curlew *Numenius arquata*



Photo: Eckart Demasius

The total population of the area numbers <100 birds. The survey of 1976/77 gave a total of 18 with all birds seen at Sandwich Harbour. Our highest count at Sandwich Harbour was 28 on 29 January with 57 at the Walvis Bay Saltworks on 23 February 1998. Only 38 were found at the latter site on 9 February 1999. Mid-summer counts at Walvis Bay have peaked at 75, median 34.

Pied Avocet *Recurvirostra avocetta* (25 & 12 ringed)



Photo: Neil Thomson

This coastal region is of great importance for this species with the two saltworks providing important refugia. The survey in 1976/77 indicated a total of about 1 700 birds, over half at Sandwich Harbour. Recent counts show that the largest numbers now occur at the saltworks although birds do spread out to feed at low tide over the tidal flats. The numbers on the coast are determined by the availability or lack of suitable inland habitat. Therefore in drought years summer numbers are higher than in pluvial years. The provenance of the birds visiting the coast is not known but is assumed to be the saline pan systems in northern Namibia and Botswana. The highest count in 1998 was of 450 at Mile 4 Saltworks on 24 January and in 1999, 130 at the same site on 20 February. Birds probably moved inland quickly following the onset of the summer rains. Recent counts at Walvis Bay, 1997-2005, have shown a maximum summer figure of over 2 700 birds and over 4 000 in mid-winter with medians of 1 174 and 1 562 respectively. It is likely that this species is increasing with the provision of stable off-season *refugia*.

Eye colour can be used to separate sub-adult and adult African Pied Avocet from their European counterparts (Tree 1992). Juveniles have brown eyes but this gradually changes to the red of the adult, probably by late first year/early second year but there may be individual variation in timing. Of the 37 birds handled in February/March, 21 had the red eyes of full adult, three immatures had red

eyes, nine had eye colour at some stage of transition from brown to red and four had the brown of juvenile.

Juveniles (4) showed a weight range of 226-283g (mean 258), immatures (12) a range of 270-351g (mean 315.5) and adults (21) a range of 277-385g (mean 332.5). This is previously unpublished data for the southern African population.

Primary moult was very variable. Juveniles ranged from all primaries intermediate to old (2 each). Immatures: three were old; one intermediate; one suspended with five intermediate and five old feathers; six were new/active first two to four feathers; one completed (probably well into second year). Adults were at all stages from just starting (one active) to all complete, but mostly in the second half of moult. It is possible that those out of synchrony were immatures but once eye colour change is complete it is very difficult to age birds.

Black-winged Stilt *Himantopus himantopus*



Photo: Neil Thomson

A denizen of the saltworks and sewage works. The survey of 1976/77 gave an overall total of only 51 and the peak count during this survey was 130 at Mile 4 Saltworks. Counts during 1997-2005 at Walvis Bay have shown summer maxima of *ca* 450 and winter maxima of *ca* 780 birds. In keeping with southern Africa in general this species has shown a large increase in numbers over the last 30 years. Although some of the coastal birds may be resident the increase in winter would involve inland birds moving from ephemeral wetlands.

Red Phalarope *Phalaropus fulicarius*



Photo: Eckart Demasius

Normally a far offshore species and rarely seen onshore. In 1999 there appeared to be a small wreck of this species, the first being seen at Walvis Bay Saltworks and along Pelican Point on 3 March, when at least seven were present and a freshly dead bird found (now in the Windhoek State Museum). Until the end of the month singles and up to three were seen at the original site, the guano platform and Mile 4 Saltworks. One further fresh specimen was found and forwarded to the museum.

Red-necked Phalarope *Phalaropus lobatus*



Photo: Eckart Demasius

Now established as a regular visitor in varying small numbers to the Walvis Bay Saltworks (peak of 56). Seen by our group on several occasions in small numbers at that site with a single bird at Mile 4 Saltworks on 20 February 1999. Two were at the latter site on 2 February 1998.

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