

## COASTAL WADERS IN GUINEA

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### INTRODUCTION

In his recent review of major wintering grounds of palearctic waders along the Atlantic coast of Africa, Tye (1987) mentions a total of 1.85 million birds between Guinea-Bissau and South Africa. This total predominantly concerns birds feeding on intertidal mud- and sandflats, and to a much lesser extent on sandy beaches and rocky coasts. By far the most important part of this coast is the stretch of c. 950 km from Rio Cacheu (north-west Guinea Bissau) through Guinea to Sherbro Island (south-east Sierra Leone), with an estimated intertidal area of c. 2 160 km<sup>2</sup> (Poorter & Zwarts 1984, Tye 1987). Recent counts revealed a wintering population of c. 1 million palearctic waders in Guinea-Bissau (Zwarts 1988, 1 570 km<sup>2</sup>) and c. 160 000 in Sierra Leone (Tye & Tye 1987, c. 218 km<sup>2</sup>).

Ornithological data from Guinea are scarce and from the coastal zone almost completely lacking (cf. review in Morel & Morel *in press*). Richards (1982) mentions concentrations of waders in the Baie de Sangarea near Conakry (especially Grey Plover, Whimbrel, Little Stint and, surprisingly, up to several thousand Avocets). During a short WIWO/ICBP mission to Guinea from 16 January to 13 February 1988 to explore the possibilities for international aid in bird protection and the establishment of bird sanctuaries, we had the opportunity to visit briefly some of the intertidal mudflats and to undertake a few sample counts. In view of the paucity of information on Guinean birds we will give the complete counts in Table 1 together with our most important impressions of this area.

### THE INTERTIDAL ZONE

As in Guinea-Bissau and the western part of coastal Sierra Leone the coastline of Guinea (c. 9-11° N and 13-15° W) is indented by river systems (Figure 1). Mudflats occur as a rather narrow strip, usually between 200-2 000 m wide, all along the coast of some 460 km, backed by extensive mangrove swamps and rice fields. Only locally mudflats are interrupted by sandy beaches (especially north of Cap Verga) or rocky outcrops (the peninsula of Conakry).

Most of the maps that show Guinea's coastline are outdated (surveys made during the first half of this century) and probably not very accurate. Our observations in the field showed that the 1:200 000 topographical maps, on the basis of which Altenburg (1987) calculated an intertidal area of c. 305 km<sup>2</sup>, are very inaccurate and that the calculated area is a large under-estimation. Also most of the British Admiralty Charts, from which Tye (1987) calculated an area of c. 374 km<sup>2</sup>, are not very accurate, although much more useful than the topographical maps mentioned above. These marine charts do not show the mudflats in the estuary of the Rio Komponi in the extreme northwest of the country (49 km<sup>2</sup> on 1:50 000 topographical map, see below, which makes a total of 423 km<sup>2</sup>).

The intertidal areas on the few recent and detailed marine charts that are available coincide more or less with those on old but

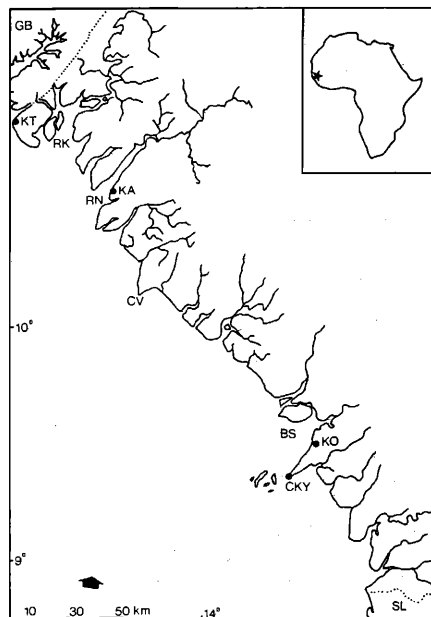


Figure 1. Guinea's coastline with localities mentioned in the text (after topographical map 1: 1 000 000, IGN 1980). BS = Baie de Sangarea, CKY = Conakry, CV = Cap Verga, GB = Guinea-Bissau, KM = Kamsar, KO = Kobayah, KT = Katchek, RK = Rio Komponi, RN = Rio Nunez, SL = Sierra Leone.

detailed topographical 1:50 000 maps (dating from 1950-60, only available in Conakry). Both our impressions in the field and the glances we could cast at recent, but unavailable, for reasons of security, Russian charts (c. 1980) suggested that the intertidal zones given on the marine charts and the 1:50 000 maps are neap tide rather than spring tide situations. According to Zwarts (1988) the intertidal zone on Guinea-Bissau which is exposed during the lowest spring low water (i.e. the intertidal area shown on the marine charts from which wader densities are usually calculated) is reduced by 5-10% around spring tide and 20-40% at neap tide. We therefore think that an area of some 500 km<sup>2</sup> is a better estimate of Guinea's intertidal zone.

According to our impressions and the information on the marine charts, the greater part of the intertidal zone consists of mud and muddy sand. Large areas of pure sand are probably uncommon. Tye (1987) has already mentioned the shortcoming of marine charts in the portrayal of sediment type. Our observations in the field showed that at least part of the mud and muddy sand areas are classed on the charts as sand. Unlike Guinea-Bissau (cf. Zwarts 1988) and probably unlike Sierra Leone (cf. Tye & Tye 1987) Guinea has a considerable area of very soft mud (man sinks > thigh-deep). This habitat occurs in at least the area directly north of the Conakry peninsula (>2 000 ha, own obs.). According to fishermen the same sediment type is found directly south of the peninsula (c. 3 000 ha).

Table 1. Sample counts of coastal waders on 3 mudflats in Guinea in January and February 1988, given as numbers/100 ha (low tide counts, from methods, see Zwarts 1988). Localities are shown in Figure 1. Areas are calculated or estimated from maps and charts as described in the text.

	Katchek 28 Jan 1988	Kamsar 24/25 Jan 1988	Kobayah 8/10 Feb 1988
Area counted	40 ha	65 ha	750 ha
Sediment type	muddy sand	mud	mud
Depth walking man sinks into substrate	(<ankle)	(>knee)	(>thigh)
Presence of Fiddler Crab <i>Uca tangeri</i>	<10%	<10%	<10%
Oystercatcher <i>Haematopus ostralegus</i>	8	-	-
Ringed Plover <i>Charadrius hiaticula</i>	110	3 129	108
Kentish Plover <i>C. alexandrinus</i>	43	29	-
White-fronted Sand Plover <i>C. marginatus</i>	58	-	-
Grey Plover <i>Pluvialis squatarola</i>	85	400	42
Turnstone <i>Arenaria interpres</i>	15	191	1
Little Stint <i>Calidris minuta</i>	523	77	51
Dunlin <i>C. alpina</i>	25	77	2
Curlew Sandpiper <i>C. ferruginea</i>	88	2 436	111
Knot <i>C. canutus</i>	-	-	3
Sanderling <i>C. alba</i>	15	-	2
Spotted Redshank <i>Tringa erythropus</i>	-	-	1
Redshank <i>T. totanus</i>	25	802	274
Greenshank <i>T. nebularia</i>	10	125	15
Wood Sandpiper <i>T. glareola</i>	-	9	-
Common Sandpiper <i>Actitis hypoleucos</i>	35	945	81
Black-tailed Godwit <i>Limosa limosa</i>	18	697	48
Bar-tailed Godwit <i>L. lapponca</i>	255	468	27
Curlew <i>Numenius arquata</i>	5	86	4
Whimbrel <i>Numenius phaeopus</i>	45	152	35
Black-winged Stilt <i>Himantopus himantopus</i>	8	-	3
Avocet <i>Recurvirostra avosetta</i>	-	-	294
Waders/100 ha	1 371	9 614	1 102
Waders/100 ha on c. comparable mudflats in Guinea-Bissau (Zwarts in litt.)	527	605	605

#### WINTERING POPULATION OF WADERS

Assuming a density similar to that in Guinea-Bissau (6.2 birds/ha, Zwarts 1988) and Sierra Leone (c. 7.4 birds/ha, calculated from figures given by Tye 1987) the intertidal area of Guinea may hold c. 350 000 waders. The densities in two of our (very small!) sample counts are somewhat higher than those in more or less comparable mudflat types in Guinea-Bissau (Zwarts in litt), even when taken into account that the actual counting area at lowest spring low water may be 20-40% larger (Table 1). The density found on the mudflats near Kamsar in the estuary of the Rio Nunez is exceptional (cf. Zwarts 1988). This high bird density could possibly be explained by the fact that the drain of the city of Kamsar ends right in the middle of the mudflats. On the whole the average density in Guinea could well be higher than in the neighbouring countries because sandy areas, with few waders, seem to be less extensive.

The figures above refer to only coastal waders feeding on tidal flats, beaches and rocky coasts. Other wetlands, particularly rice fields in cleared mangrove areas (in Guinea c. 600 km<sup>2</sup>, Altenburg 1987) can hold large numbers of wintering waders, although these are primarily "inland" species (see Altenburg & van der Kamp (1986) for the situation in Guinea-Bissau with 1 800 km<sup>2</sup> of rice fields). According to our observations the mangroves in Guinea (c. 2230 km<sup>2</sup>, Altenburg 1987) may support at low water some tens of thousands of waders, mostly Whimbrel, and smaller numbers of other species such as Common Sandpiper, Redshank and Greenshank. This is similar to the situation in Guinea-Bissau (Zwarts 1988).

From our counts and habitat observations we can make a rough estimate of the wintering population of coastal waders in Guinea's intertidal zone, including the mangroves, of 400 000 birds. If bird densities in rice fields are comparable with those in Guinea-Bissau, the Guinea fields may hold some 100 000 waders, mostly inland waders. This will probably mean that all or most of the sites identified by Tye (1987) are of international importance (> 20 000 waders). Wader populations in Guinea are probably under no great threat, though there is a considerable hunting pressure further inland.

#### SPECIES COMPOSITION

Species composition and distribution at low tide resemble those in Guinea-Bissau and Sierra Leone, with probably important numbers of species characteristic of muddy shores like Curlew Sandpiper, Redshank, Little Stint, Whimbrel, Ringed Plover and Common Sandpiper (see Zwarts 1988). We expect species of sandier shores, such as Bar-tailed Godwit and Knot to be less abundant. The latter species has only been observed in very small numbers. As in Guinea-Bissau, but unlike Sierra Leone the Dunlin is frequent. The relatively large number of Black-tailed Godwits could well be second-year birds spending the summer in Africa. According to Altenburg & van der Kamp (1985) the adult Godwits have already left their wintering grounds (the drying-out rice fields) in early January. Because rice fields and coastal marshes are dry between roughly February - June/July, the adjacent mudflats may be the only place on the coast where overwintering is possible. We do not know, however, if the birds do stay on Guinea's

coast. Zwarts (1988) does not mention Black-tailed Godwits on the mudflats of Guinea-Bissau in late January/early February; however, these counts concentrated on the Bijagos Archipel, where the species does not overwinter because there are no rice fields nearby.

The very large number of Avocets on the soft mudflats near Conakry is surprising. With a density of 294 per 100 ha in early February and a minimum 2 000 ha of soft mud, there must be at least 6 000 birds at this time of the year, and possibly considerably more. This agrees with the remark of Richards (1982) about Avocets: "very common, at times several thousands". Guinea's coast holds the only known concentration of this species in West Africa outside Senegambia (e.g. Morel & Roux 1973: 4 000 in Senegal Delta and coastal lagoons north of Cap Vert, January 1972; Urban et al. 1986: 3 000 Cap Vert, 5 000 Saloum Delta). Though it seems certain that the Avocets leave Guinea from mid-February onwards (A. Le Dru pers. comm.), it is not at all clear whether these birds belong to the West European population, to more easterly breeding populations, or even to an unknown resident population.

Unlike most other wader species the Avocet was not seen roosting during high tide in the mangroves. Instead, the birds were swimming in large flocks in shallow water close to the shore, a phenomenon which occurs regularly in Western Europe (L. Zwarts pers. comm.).

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