



## WADERS OF THE GULF OF GABÈS, TUNISIA, JANUARY TO MARCH 1984

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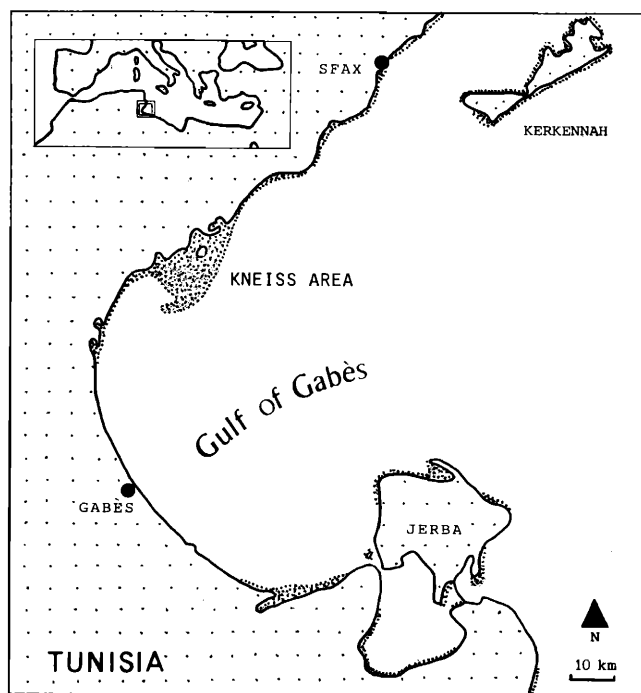
From 19 January to 19 March 1984 a Dutch expedition visited the Gulf of Gabès along the south coast of Tunisia (Figure 1) to study the wintering populations of Palearctic waders and waterfowl in this intertidal area. This paper summarises the findings of the expedition.

In general the Mediterranean is considered to be almost tideless, but in the Gulf of Gabès a significant tidal range of up to two metres exists, and there are extensive tidal mudflats. According to Prater (1976), the number of wintering waders in the Mediterranean is low, but Smart (1983) and Czajkowski (in Cramp and Simmons 1983) have mentioned the region of the Gulf of Gabès as an important wintering area for thousands of waders. These figures suggest much larger total numbers than given by Prater (1976) but up till now precise data have been lacking. On the initiative of the International Waterfowl Research Bureau (IWRB), a Dutch expedition - 'WIWO Tunisia Project 1984' - carried out investigations in the Gulf of Gabès. The principal aims of the expedition were:

1. a complete census of the wintering population of waders and waterfowl in the intertidal areas in the Gulf of Gabès.
2. to catch and ring waders to collect information on biometrics and geographical origins.
3. to quantify the standing crop of the macrobenthic invertebrates of the intertidal mudflats.

Special attention was paid also to the Greater Flamingo *Phoenicopterus ruber*.

The 'WIWO Tunisia Project 1984' was one of the first projects of the WIWO, the Dutch Foundation for International Wader and Waterfowl Research. This foundation was established as a result of earlier Dutch wader expeditions to Mauritania and Morocco (Altenburg et al. 1982, Van Brederode et al. 1982, Kersten et al. 1983). The 'WIWO Tunisia Project 1984' was financed by The World Wildlife Fund - The Netherlands, Netherlands Ministry of Agriculture and Fisheries, The Netherlands Foundation for International Nature Protection (Van Tienhoven Stichting), Beijerinck - Popping Fund of the Royal Netherlands Academy of Sciences, Foundation Tour du Valat and the International Waterfowl Research Bureau.



63 mudflats

Figure 1. The Gulf of Gabès in Tunisia. Fine dotted areas are extensive mudflats.

Our thanks for their co-operation go to the Tunisian authorities, ornithologists and local people. The help and advice of several ornithologists and authorities in the Netherlands, Britain and France was also very appreciated.

### CENSUSES

In the period 9 - 22 February 1984 we carried out one complete census of most of the intertidal areas in the Gulf of Gabès (Figure 1 and Table 1). We counted a total of 242 000 waders and most of them were concentrated in the Kneiss area (161 000). Parts of the Kneiss area we counted twice (in January and

Table 1. Counts of waterfowl and waders in the Gulf of Gabès, Tunisia, 9-22 February 1984

		Kneiss area	elsewhere in Gulf of Gabès	Total Gulf of Gabès	Kneiss area	elsewhere in Gulf of Gabès	Total Gulf of Gabès
Great Crested Grebe	<i>Podiceps cristatus</i>	-	121	121	-	1638	1688
Black-necked Grebe	<i>Podiceps nigricollis</i>	12	835	847	3306	594	3900
Cormorant	<i>Phalacrocorax carbo</i>	541	2237	2778	-	1	1
Little Egret	<i>Egretta garzetta</i>	570	449	1019	7447	4552	11999
Great White Egret	<i>Egretta alba</i>	8	14	22	16	7	23
Grey Heron	<i>Ardea cinerea</i>	556	511	1067	16717	10454	27171
White Stork	<i>Ciconia ciconia</i>	-	1	1	-	14	14
Spoonbill	<i>Platalea leucorodia</i>	357	1066	1423	579	343	922
Greater Flamingo	<i>Phoenicopterus ruber</i>	4115	5971	10086	5	19	24
Shelduck	<i>Tadorna tadorna</i>	798	916	1714	228	242	470
Wigeon	<i>Anas penelope</i>	2440	2830	5270	-	1	1
Mallard	<i>Anas platyrhynchos</i>	-	2	2	-	1000	1000
Pintail	<i>Anas acuta</i>	709	365	1074	-	4	4
Garganey	<i>Anas querquedula</i>	-	5	5	-	2	2
Shoveler	<i>Anas clypeata</i>	4	28	32	-	1	1
Coot	<i>Fulica atra</i>	-	682	682	-	7531	9541
Crane	<i>Grus grus</i>	81	616	697	2010	6725	7610
Oystercatcher	<i>Haematopus ostralegus</i>	2227	825	3052	885	9838	14765
Black-winged Stilt	<i>Himantopus himantopus</i>	-	98	98	4927	2714	3711
Avocet	<i>Recurvirostra avosetta</i>	130	2587	2717	1057	3184	10537
Stone Curlew	<i>Burhinus oedionemus</i>	-	5	5	4	12	16
Ringed Plover	<i>Charadrius hiaticula</i>	239	315	554	-	4	4
Kentish Plover	<i>Charadrius alexandrinus</i>	3323	5854	9177	73	-	73
Dotterel	<i>Charadrius morinellus</i>	-	20	20	54	467	521
Golden Plover	<i>Pluvialis apricaria</i>	-	34	34	34	400	434
Grey Plover	<i>Pluvialis squatarola</i>	12566	7214	19780	-	8	8
Knot	<i>Calidris canutus</i>	15	170	185	-	-	-
Sanderling	<i>Calidris alba</i>	31	104	135	4504	8021	12525
Little Stint	<i>Calidris minuta</i>	19800	4586	24386	5687	8628	14315
Curlew Sandpiper	<i>Calidris ferruginea</i>	8659	1387	10046	160540	80970	241510
Dunlin	<i>Calidris alpina</i>	85195	38880	124075	16397	30890	47287
Ruff	<i>Philomachus pugnax</i>	-	2	2	-	-	-
Snipe	<i>Gallinago gallinago</i>	7	24	31	187128	128509	315637
	Grand Total						

February): the numbers were similar. On several inland lakes as well as the Gulf of Gabès Greater Flamingos were counted (Table 2). The February counts gave a total of 24 729 Flamingos. We could identify 41 individual Flamingos which had been ringed with plastic coloured leg rings in the Camargue (France), and 1 bird with a neck-collar, originating either from Iran (Lake Rezaïyeh) or the USSR. A local fisherman brought us a Flamingo tarsus with a Russian ring.

Near Sfax we identified a colour-marked Cormorant *Phalacrocorax carbo* ringed in 1983 in the Oostvaardersplassen in the Netherlands.

#### CATCHING

We mist-netted 657 waders during two dark moon periods: between 30 January - 8 February 1984 we trapped 188 waders in the intertidal area

Table 2. Counts of the Greater Flamingo *Phoenicopterus ruber* at several locations in Tunisia in 1984

Location	Date	Number
Lake Tunis	21 Jan	10530
Lake Ichkeul	22 Jan	0
Sfax - La Skhira	26-28 Jan	9739
Sidi Mansour	29 Jan	0
Gulf of Gabes	9-22 Feb	10086
Sebkhet el Djem	16 Feb	44
coast near Monastir	16 Feb	3
Halle el Menzel	16 Feb	316
Lake Tunis	19 Feb	5700
Sebkha Sedjoui	19 Feb	8500
Sebkhet Sidi el Hani	22 Feb	80
Lake Ichkeul	18 Mar	0

Table 3. Numbers of waders captured during January - March 1984 in near Thyna and in the Kneiss area, Tunisia. Retrapped is ringed and recaptured at the same place.

		salines at Thyna			Kneiss area			Total
		newly ringed	retrapped	total	newly ringed	retrapped	total	
Oystercatcher	<i>Haematopus ostralegus</i>	-	-	-	2	-	2	2
Avocet	<i>Recurvirostra avosetta</i>	1	-	1	2	-	2	3
Stone Curlew	<i>Burhinus oediconemus</i>	-	-	-	1	-	1	1
Ringed Plover	<i>Charadrius hiaticula</i>	1	-	1	1	-	1	2
Kentish Plover	<i>Charadrius alexandrinus</i>	9	1	10	42	3	45	55
Grey Plover	<i>Pluvialis squatarola</i>	2	-	2	38	-	38	40
Little Stint	<i>Calidris minuta</i>	22	-	22	10	0	10	32
Curlew Sandpiper	<i>Calidris ferruginea</i>	18	1	19	3	0	3	22
Dunlin	<i>Calidris alpina</i>	118	5	123	292	5	297	420
Black-tailed Godwit	<i>Limosa limosa</i>	1	-	1	-	-	-	1
Curlew	<i>Numenius arquata</i>	2	-	2	5	-	5	7
Redshank	<i>Tringa totanus</i>	7	-	7	63	1	64	71
Greenshank	<i>Tringa nebularia</i>	-	-	-	1	-	1	1

near the salines of Thyna (7 km south of Sfax), and between 25 February - 14 March 1984 we trapped 469 waders in the Kneiss area (Table 3). Notably, we did not catch any previously ringed wader. Resightings of marked birds, and recaptures, seem to indicate that the wintering population of waders in the salines of Thyna was rather stable.

#### AVAILABLE MACROBENTHIC STOCK

In general, the intertidal mudflats were muddy and covered with vegetation (e.g. Eel-grass *Zostera* spp.). In the Kneiss area, 9 localities of these mudflats were sampled for macrobenthic biomass. First results show that *Cerithium vulgatum* was the most common mollusc, living on the surface in densities up to 5000 per m<sup>2</sup>. This species is not thought, however, to be an important prey species for waders since it has a very heavy shell.

Total biomasses averaged about 20-25 g ash-free dry weight per m<sup>2</sup>, half of it being *Cerithium vulgatum*. Important prey species for waders were the bivalves *Abra* spp. and *Cardium* spp., *Nereis*-like polychaetes and tube dwelling polychaetes.

Full results of the expedition will be published in an expedition report.

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