

WADER COUNTS IN THE TEJO ESTUARY NEAR LISBON AND IN THE SALINAS OF SOUTH PORTUGAL

by Rob G. Bijlsma, Peter L. Meininger, Marcel Rekers, Frank E. de Roder, Renske Schutting and Rob Vogel

INTRODUCTION

Rufino *et al.* (1984) have recently pointed out the importance of the salinas in southern Portugal. Their research area was the salinas and mudflats of the Ludo complex near Faro. However, from Faro eastwards to the Spanish border several more salinas are situated, which are much less known (Rufino 1980). During January and February 1984 we visited these salinas in order to get an idea of their importance for waders. Furthermore, we tried to complete a census in the Tejo estuary, an extensive area of mudflats which has received much attention during the last decade (Rufino 1984).

AREAS VISITED AND METHODS

The Tejo estuary (38°48'N, 08°57'W) was visited by car and on foot during 20-21 January. Only parts of the eastern shore were covered, viz. from Alcochette northwards to Ponta d'Erva (c. 10 km south of the bridge near Vila Franca de Xira). Flooded farmland was visited in the vicinity of Bate Orelhas. Black-tailed Godwits *Limosa limosa* were counted during their morning flight from 07.30-08.30 hrs (local time) near Bate Orelhas.

The salinas from Faro eastwards were visited by car and on foot during 22 January to 6 February (Table 1, Figure 1). The description of the salinas near Ludo by Rufino *et al.* (1984) also applies to the other salinas along the coast of southern Portugal. There is some exchange of waders between the salinas and the mudflats along the coast (Rufino *et al.* 1984), probably depending on the tide. We visited the salinas irrespective of the tide, so that the numbers of waders might at times have been higher where we performed a census during low tide. The waders near Castro Marim, however, were fully dependent on the salinas; we never noticed any exchange with other areas during a continuous stay of seven days there.

RESULTS AND DISCUSSION

When comparing the number of waders in the Tejo estuary (Table 2) with those obtained by Rufino (1984), no obvious differences with the winter averages for 1976 to 1982 are apparent, except for the Black-tailed Godwit. Our total of nearly 21 000 birds greatly exceeds the previous highest total of 12 195 birds. Our count was a very exact one, because it was obtained during the early morning flight, in which easily countable flocks of 100-800 birds passed regularly in a NNE direction. Later on, we found compact flocks of Black-tailed Godwits near Ponta d'Erva, hectically foraging on recently ploughed grassland. Apparently, the birds were feeding on the invertebrates exposed by ploughing. The high total of Black-tailed Godwits could have been the result of profuse rainfall in Portugal and Spain during the months preceding our stay, causing the birds to

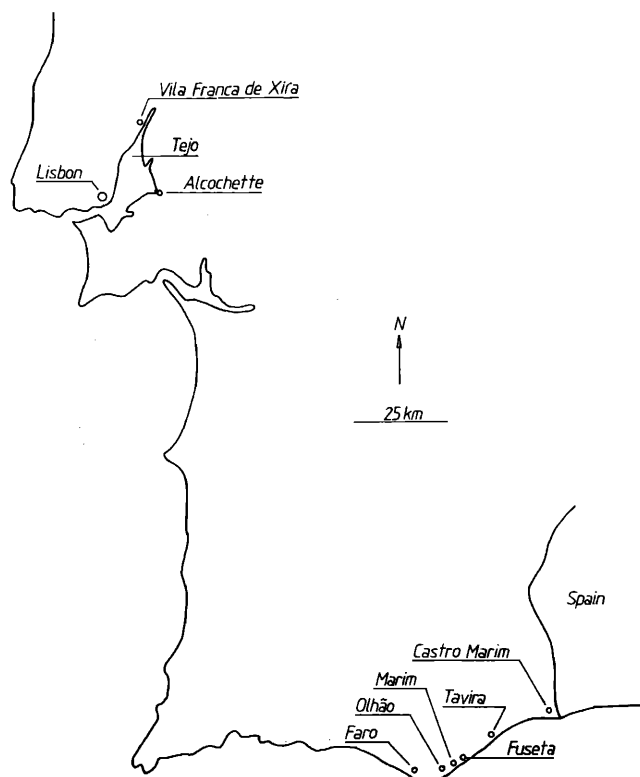


Figure 1. Southern Portugal, showing sites mentioned in the text.

stay behind in migrating areas in larger numbers than usual. On 8 February we also counted 3600 Black-tailed Godwits in a flooded area near El Rocia (37°08'N, 06°31'W) just outside the Coto Donana National Park in southern Spain. These high numbers remaining in Iberia are consistent with the relatively low numbers in the wintering areas in West-Africa in the same winter (M. Elgelmoer pers. comm.).

According to Cramp & Simmons (1983), Temminck's Stints *Calidris temminckii* occasionally winter in the western Mediterranean, although no data are mentioned for the Iberian Peninsula. On 20 January we identified an adult in its typical habitat of mudflats with an abundant growth of weeds and sedges near Ponta d'Erva in the Tejo estuary.

With a total of at least 12 000 waders on only 533 ha of salinas, the importance of these areas is clear. Probably, many more waders make use of the salinas. Rufino *et al.* (1984), for example, counted 7500 waders in the Ludo complex near Faro during January 1984, whereas we counted less than 4000 birds there. Except for the salinas near Castro Marim, which were counted thoroughly several times, the totals for the other salinas could have been higher as well.

Table 1. Location, area, and area counted (in ha), of sites in southern Portugal.

	co-ordinates	area	area covered	% covered
Faro	37°01'N 07°56'W	200	25	13
Olhao	37°01'N 07°50'W	53	20	38
Marim	37°02'N 07°48'W	18	18	100
Fuseta	37°02'N 07°45'W	24	24	100
Tavira	37°07'N 07°39'W	74	74	100
Castro Marim	37°13'N 07°26'W	372	372	100

Table 2. Counts of waders in the Tejo estuary near Lisbon and in the salinas of South Portugal, January and February 1984

	Tejo		Faro	Olhao	Marim	Fuseta	Tavira	Castro Marim
	20-21 Jan	22,29 Jan	23 Jan	23 Jan	1 Feb	1 Feb	23 Jan-6 Feb	
<i>Haematopus ostralegus</i>	-	1	-	-	-	11	-	
<i>Himantopus himantopus</i>	-	66	6	-	-	29	51	
<i>Avosetta recurvirostra</i>	6910	70	-	-	-	69	252	
<i>Charadrius hiaticula</i>	75	173	8	4	63	143	120	
<i>Charadrius alexandrinus</i>	200	387	43	5	240	422	163	
<i>Pluvialis squatarola</i>	5055	21	12	-	11	33	93	
<i>Vanellus vanellus</i>	25	133	-	-	-	-	37	
<i>Calidris canutus</i>	175	26	2	-	-	1	-	
<i>Calidris alba</i>	52	-	-	-	-	20	-	
<i>Calidris minuta</i>	26	250	71	4	177	873	83	
<i>Calidris temminckii</i>	1	-	-	-	-	-	-	
<i>Calidris ferruginea</i>	16	21	-	-	3	8	-	
<i>Calidris alpina</i>	17765	1875	145	11	352	2208	56	
<i>Philomachus pugnax</i>	12	2	-	-	-	-	3	
<i>Gallinago gallinago</i>	12	26	15	-	8	17	104	
<i>Limosa limosa</i>	20653	206	6	10	35	674	323	
<i>Limosa lapponica</i>	5000	31	8	7	-	-	3	
<i>Numenius arquata</i>	235	34	2	-	21	36	49	
<i>Tringa erythropus</i>	2	8	4	-	1	9	224	
<i>Tringa totanus</i>	1954	447	21	28	46	332	330	
<i>Tringa nebularia</i>	6	12	1	1	-	10	13	
<i>Tringa ochropus</i>	1	-	-	-	-	1	1	
<i>Tringa glareola</i>	-	-	-	-	-	-	3	
<i>Actitis hypoleucos</i>	21	12	2	4	6	35	20	
<i>Arenaria interpres</i>	9	7	-	-	2	17	-	

The hunting pressure on waders was extremely high. Cartridges were found in large quantities in all the salinas visited. Even in the salinas near Castro Marim, which belonged to a National Reserve in which hunting was prohibited, hunters were shooting waders and ducks on Thursdays and Sundays (the official days for hunting in Portugal). On 26 January and 5 and 12 February two hunters shot at least 1 Pintail *Anas acuta*, 2 Avocets *Recurvirostra avosetta*, 3 Black-tailed Godwits, 1 Snipe *Gallinago gallinago*, 1 Spotted Redshank *Tringa erythropus* and 2 Redshanks *Tringa totanus*. The hunting made the birds extremely wary. Near Castro Marim, Avocets, Black-tailed Godwits and Spotted Redshanks tried to use the same roosts and feeding places day after day, but were forced to fly around frequently due to disturbance by hunters.

ACKNOWLEDGEMENTS

Thanks to the hospitable co-operation with the Centro de Estudos de Migracoes e Protecção de

Aves (CEMPA), in particular Rui Rufino and Antonio Teixeira, we could make use of the Biological Stations near Pancas and Castro Marim.

REFERENCES

- Cramp, S. and Simmons, K-E-L. 1983. *The Birds of the Western Palearctic*, Vol.3. Oxford University Press, Oxford.
- Rufino, R. 1980. *Limicolos em Portugal*. CEMPA, Lisboa.
- Rufino, R. 1984. Autumn and winters numbers of waders in the Tejo estuary, Portugal. *Wader Study Group Bull.* 42: 43-44.
- Rufino, R., Araujo, A., Pina, J.P. and Miranda, P.S. 1984. The use of salinas by waders in the Algarve, South Portugal. *Wader Study Group Bull.* 42: 41-42.

Rob G. Bijlsma, Bovenweg 36, 6721 HZ Bennekom, The Netherlands.