

Waders of the Sivash Gulf, Azov - Black Sea, USSR

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Chernicko, I.I., Grinchenko, A.B. & Siokin, V.D. 1991. Waders of the Sivash Gulf, Azov-Black Sea, USSR. *Wader Study Group Bull.* 63: 37-38

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Sivash is a shallow gulf of the Azov Sea 2,500 square kilometres in area, adjoining the Black Sea to the west. The area comprises a sequence of saline lagoons along a heavily indented coastline. It provides suitable wader habitat throughout the year. Millions of birds use the area during migration and moult, especially Charadriiformes, Anseriiformes and Ciconiiformes. This report deals only with numbers and distribution of waders.

Water depth over 75% of the Gulf does not exceed 35-40 cm. Over the remainder, particularly in the eastern

part, water depth reaches 150 cm. The strong influence of wind and the annual variations in water level lead to a high degree of dynamism in the distribution of waders around the Gulf.

Since the 1970s, there has been a considerable increase in the flow of fresh water into the Gulf from irrigation schemes and rice paddies. This has increased the diversity of suitable feeding habitats for the birds and resulted in the colonisation of plant communities hitherto unknown on the Gulf coast. The altered ecology of the area has caused changes in the

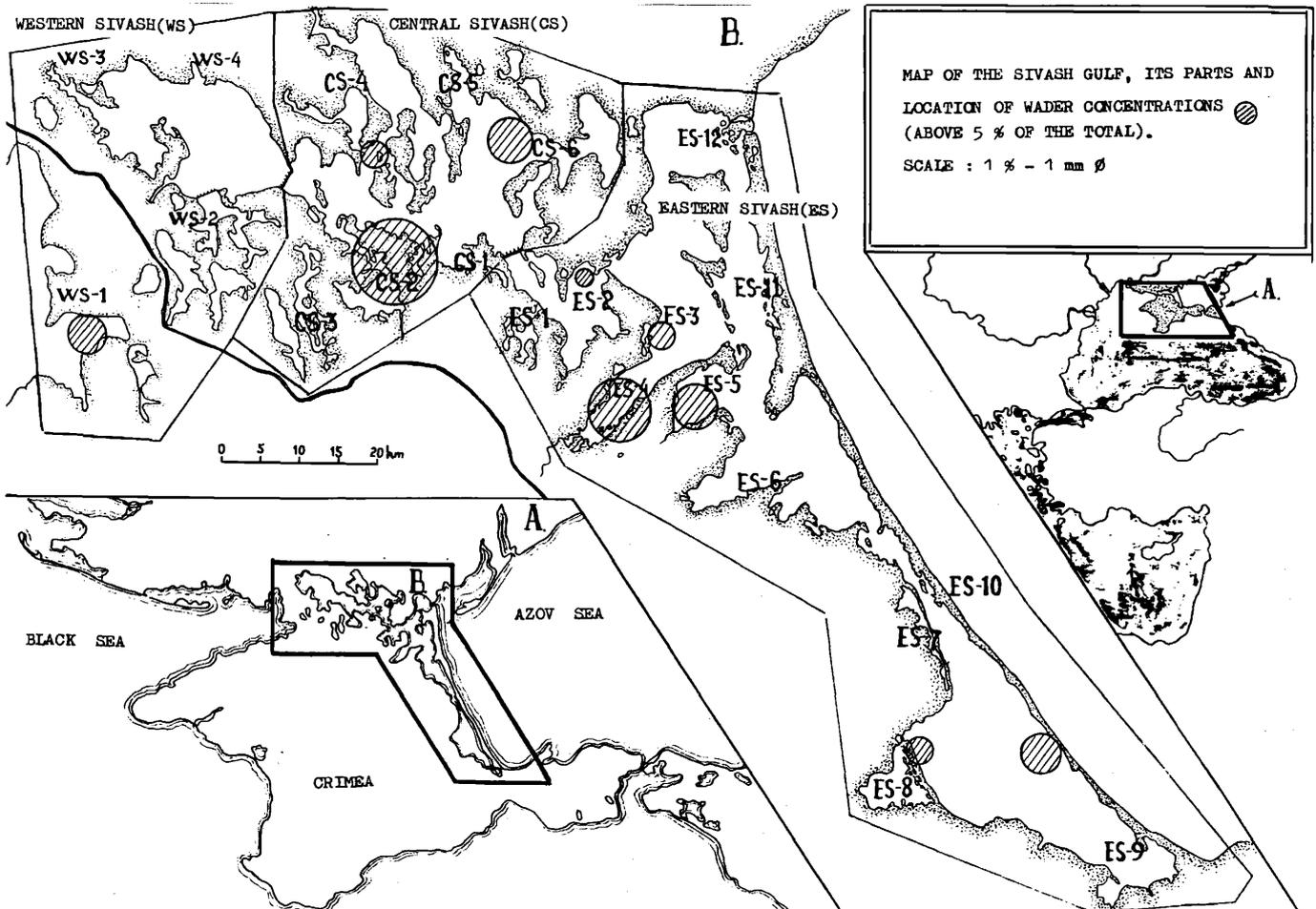


Figure 1. Map of the Sivash Gulf.



SPECIES	NUMBER OF BIRDS				AREAS OF SIVASH GULF														
	SPRING	AUTUMN	WIN-TER	WS-1	WS-2	WS-3	WS-4	CS-2	CS-3	CS-4	CS-6	ES-1	ES-2	ES-3	ES-4	ES-5	ES-8	ES-ET 10 ALL	
<i>Squatarola squatarola</i>	4131-5500	750-1000	200	3.6			0.9	5.5			2.9	1.8	1.5	7.3	72.6			2.2	1.9
<i>Pluvialis apricaria</i>	1-15	2.10	+					+										+	+
<i>Charadrius hiaticula</i>	370-500	45-60					2.4	12.0						80.6					5.0
<i>Ch. morinellus</i>	5-10	?									+								+
<i>Tringa ochropus</i>	10-50	5-10	+	+		+	+			+									+
<i>T. glareola</i>	300-400	2800-3500		20.1									78.2		1.4				0.3
<i>T. nebularia</i>	10-30	70-90	+	+				+											+
<i>T. totanus</i>	4100-6000	28000-32000		15.0	0.6	1.2	0.4	0.6	5.0	?	0.4	2.5	12.5	2.5	12.5	1.5	1.2	6.7	37.5
<i>T. erythropus</i>	200-240	+					+												+
<i>T. stagnatilis</i>	45-60	300-400			+			+											+
<i>Actitis hypoleucos</i>	5-10	20-50		+	+	+							+						+
<i>Xenus cinereus</i>	?	1-5		+															+
<i>Phalaropus lobatus</i>	5400-8000	900-1200					10.6	89.1	0.2										
<i>Arenaria interpres</i>	2900-3900	650-800									15.4	35.9			17.9			30.8	
<i>Philomachus pugnax</i>	153000-250000	19700-29600	30	23.6	5.9	0.2	0.02	30.8		1.4	13.8	1.2					19.7	3.4	
<i>Calidris minutus</i>	16000-21000	40000-50000		2.4	3.0	4.8	20.6	1.7	8.5		15.9	2.5	18.7	13.0	9.3				
<i>C. temminckii</i>	1-5	5-10		+					+										
<i>C. ferruginea</i>	47400-63200	80000-140000		0.6	0.06		0.6		46.7	0.6	0.6	2.5		40.0	6.7				4.4
<i>C. alpina</i>	170000-254000	100000-160000	30	5.9	0.4	0.7	29.5		1.4	7.1		5.9	14.2	11.8	21.2			7.1	0.5
<i>C. maritima</i>	?	1-2		+															
<i>C. alba</i>	1300-1700	?							8.0			68.9	22.9						
<i>C. canutus</i>	150-200	100-120					+												
<i>Limicola falcinellus</i>	150-200	800-1000		19.5			53.0				21	0	2.5		4.0				
<i>Lymnocyptes minima</i>	10-15	5-7	+	+		+	+												+
<i>Gallinago media</i>	1-2	?		+					+										
<i>G. gallinago</i>	2-5	3-7		+															+
<i>Scolopax rusticola</i>	5-7	5-10		+										+		+			
<i>Numenius arquata</i>	1060-1400	2500-3700	600	16.9	+		+	19.7		4.8		14.1		28.2	1.4		6.2	8.4	
<i>N. phaeopus</i>	700-1000	450-500		81.7				3.8				8.5		6.0					
<i>Limosa limosa</i>	100-120	1800-2000		+	73.8			16.2									6.3	3.7	
<i>L. lapponica</i>	1000-1200	100-130					11.0					4.8	3.0	80.3					0.9

+ = individuals or small groups found periodically

Table 2. Number (in pairs) and location of nesting species of waders in different areas of Sivash with proportions in west (WS), east (ES) and central (CS) Sivash

SPECIES	Number of pairs		WS %	CS %	ES %
	Min.	Max.			
<i>Vanellus vanellus</i>	106	300	35.8	15.1	49.0
<i>Tringa totanus</i>	422	1500	28.4	13.0	41.9
<i>Recurvirostra avosetta</i>	2572	3000	61.7	15.9	22.4
<i>Charadrius alexandrinus</i>	154	800	4.5	29.2	66.3
<i>Charadrius dubius</i>	0	50	?	?	?
<i>Haematopus ostralegus</i>	87	120	2.3	11.5	86.2
<i>Himantopus himantopus</i>	711	1100	24.6	6.2	69.2
<i>Glareola pratincola</i>	392	860	15.8	1.3	82.9
<i>Glareola normanni</i>	0	10	?	?	?
Total	4450	7680	44.7	13.2	42.1

proportions of different species present in the bird assemblages, reducing the number of coastal species and increasing the number of species characteristic of inland water meadows. The increase in sheep grazing and tourism on the Gulf coast has also contributed to the reduction in coastal waders, particularly species which breed locally.

For several years the scientific workers of the Azov-Black Sea Ornithological Station have been carrying out research programmes on the many nesting and passage birds of the Sivash area. They undertake an annual bird census over 25-30% of the Sivash area. The census data is most complete for the spring

migration and breeding season.

Sivash is a very important wetland for waders, particularly as a migratory staging post and moulting area. During spring passage, 846,000 - 1,129,000 waders of 39 species have been counted on the Sivash. In autumn numbers range from 976,000 - 1,240,000 birds. Table 1 shows numbers and location of 30 species of wader on passage through the Sivash. These figures are undoubtedly underestimates due to rapid turnover of birds (for example in spring, Ruff *Philomachus pugnax*, Redshank *Tringa totanus*, and in autumn Dunlin *Calidris alpina* and Curlew Sandpiper *C. ferruginea*). The Ornithological Station annually catch and mark waders during the spring and autumn passage.

From 4,450 to 7,680 pairs of waders of nine species nest on the Sivash (Table 2). The Ornithological Station studies the ecology and biology of bird populations nesting on the islands and spits. In warm winters the Sivash Gulf shelters 11 species of wader, but never in large numbers.

There are some nature reserves on the Sivash Gulf but protection is only partial and currently insufficient. Therefore the scientific workers of the ornithological station are now arranging for an Azov-Sivash National Park which will include about 70% of the Sivash Gulf.

