

African-Eurasian Flyways

A census of migrating waders in Bulgaria during March-May 1990

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Nankinov, D., Tsvetkova, K., Bedev, K., Lamburov, G., Minchev, N., Bozhilov, V., Marin, S., Seizov, G., & Kotsakov, G. 1996. A census of migrating waders in Bulgaria during March-May 1990. *Wader Study Group Bull.* 83: 37-43.

A census was conducted at 14 principal areas for migratory waders in Bulgaria. A total of 32 wader species were observed, representing 40,802 individuals. The migration was at its maximum at the end of March and early April with 38% of records. Another migration wave occurred during the second half of May. The greatest numbers of migrants were Ruffs *Philomachus pugnax*, which comprised 35% of total wader numbers, followed by Curlew Sandpiper *Calidris ferruginea* (17.7%), and then Avocet *Recurvirostra avosetta* (11%). The Pomoriisko and Atanassovsko ezero (lake), where respectively on average 3,487 and 1,733 waders stopover, are of primary importance for the spring migration of waders in Bulgaria.

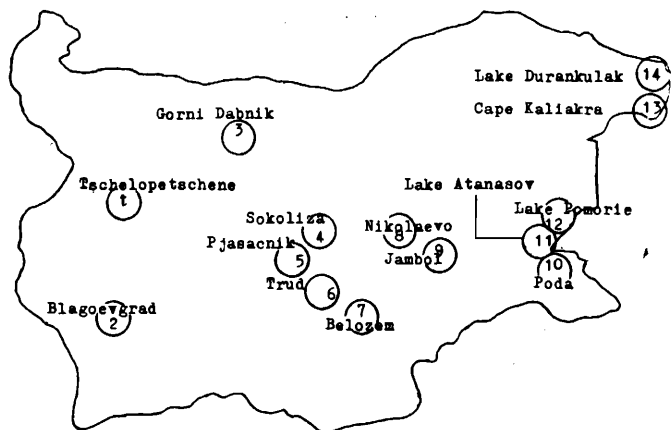
INTRODUCTION AND METHODS

A census of migrating waders in Bulgaria was conducted in March-May 1990 in connection with an international project to study waders on their migration routes between African wintering sites and nesting sites. In the course of the census we tried to include the main areas in Bulgaria where waders converge (Figure 1), above all the lakes along the Bulgarian Black Sea coast (Atanassovsko ezero,

Pomoriisko ezero, Durankulak), the Poda marshland near Burgas, the steppe sites at Cape Kaliakra, as well as inland reservoirs at the fisheries at Chelopechene, Blagoevgrad, Sokolitsa, Trud, Nikolaevo, and Yambol, the artificial lakes at Gorni Dabnik and Pysachnik and the rice fields at Belozem. For a number of reasons, among them political tension in the country and lack of funds, the plan as originally envisaged was not fully realised. The census was conducted at weekends as most of the participants were not available on weekdays.

Figure 1. The sites for censusing of waders in Bulgaria (March-May 1990)

1. Fish ponds Tschelopetschene (Sofia)
2. Fish ponds Blagoevgrad
3. Artificial lake Gorni Dabnik
4. Fish ponds Sokoliza (Karlovo)
5. Artificial lake Pjasacnik
6. Fish ponds Trud (Plovdiv)
7. Rice-fields Belozem
8. Fish ponds Nikolaevo (Sliven)
9. Fish ponds Jambol
10. Place Poda (Burgas)
11. Lake Atanasov (Atanassovsko ezero)
12. Lake Pomorie (Pomoriisko ezero)
13. Cape Kaliakra
14. Lake Durankulak



RESULTS

Over the period a total of 32 species of waders were recorded at 14 sites (Table 1). Observations of interest are summarised by species below.

Oystercatcher *Haemantopus ostralegus*

Separate birds or flocks were observed around the fisheries at Chelopechene, Sokolitsa, Trud, in the Belozem rice-fields, the Poda locality and above all Atanassovsko ezero and Pomoriisko ezero. Sightings at the end of April and in May were of nesting pairs: one pair on the rice-fields of Belozem, Poda and Pomoriisko ezero and two pairs in Atanassovsko ezero. Two young were found in the Atanassovsko ezero on 24 May.

Black-winged Stilt *Himantopus himantopus*

Most birds were observed in the main nesting areas of this species: Atanassovsko ezero - about 60 pairs, Pomoriisko ezero - 35 pairs, Poda marshes - 14 pairs, and Durankulak Lake - 2 pairs. We think that the species was nesting in the Sokolitsa fisheries (one pair) and the Yambol fisheries (two pairs). The migration of Black-winged Stilt was late in 1990. The first sightings were on 8 April, while most birds arrived at the end of the month.

Avocet *Recurvirostra avoetia*

Avocets were observed only in East Bulgaria (Figure 2) and in the main nesting areas - the Pomoriisko ezero and Atanassovsko ezero, where respectively 100 and 125 pairs nested. In March and April, between 300 and 400 pairs assembled there during migration. Avocets also nested at the Poda marshes (one pair), Durankulak Lake (two pairs), and possibly in the Yambol fisheries (one pair). Six pairs had nests with eggs by 22 April.

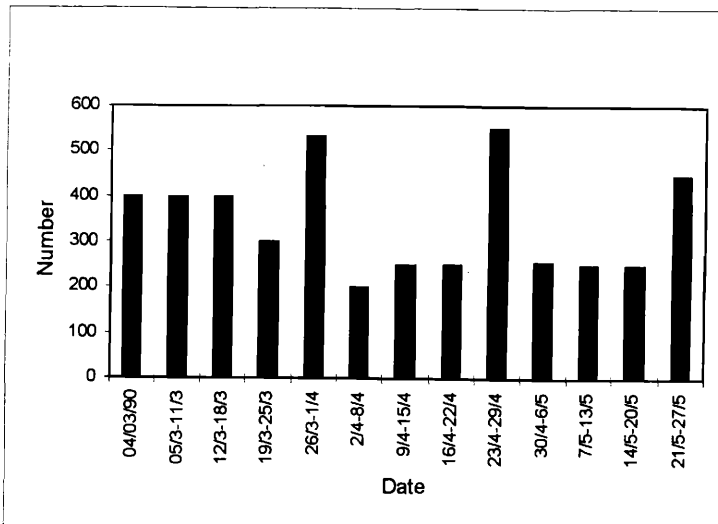


Figure 2 The variation in numbers of Avocet throughout the census period

Stone Curlew *Burhinus oedicanus*

One pair each was observed on the traditional nesting grounds of the Stone Curlew around Cape Kaliakra, off Blagoevgrad and the Atanassovsko ezero. There has been a trend for Stone Curlews to breed on farmland. Currently the population in Bulgaria exceeds 100 pairs.

Collared Pratincole *Glareola pratincola*

The Collared Pratincole was observed at only two sites: the fisheries at Sokolitsa (1-4 pairs) and the Atanassovsko ezero (6-13 pairs). The first migrants appeared on 22 April.

Black-winged Pratincole *Glareola nordmanni*

Two specimens of this rare European bird were observed at the Atanassovsko ezero, where we suppose it nests.

Lapwing *Vanellus vanellus*

Lapwings are one of the commonest waders migrating through Bulgaria. They were absent from all biotopes included in the census and their vicinity. Hundreds of specimens converged in the fisheries of Sokolitsa, the Pyasachnik artificial lake, and the Atanassovsko ezero. As an early migrant, its migration generally ends in March and early April (Figure 3). The first hatched young in the fisheries in Sokolitsa were observed on 22 May.

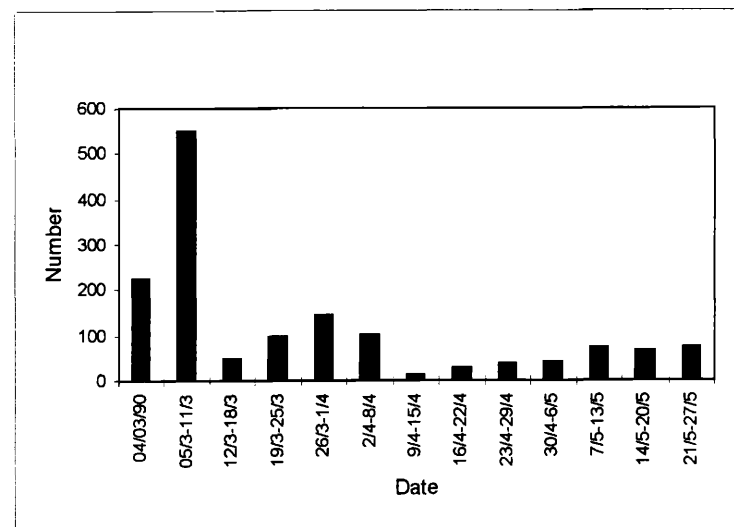


Figure 3 The variation in numbers of Lapwing throughout the census period

Grey Plover *Pluvialis squatarola*

The greatest number (up to 11 specimens) were observed on Atanassovsko ezero. Only five were observed in the fisheries of Trud.

Ringed Plover *Charadrius hiaticula*

To our surprise the Ringed Plover was observed only in the interior of the country (between 29 April and 27 May), in the Sokolitsa fisheries (two specimens) and Yambol (1-9 specimens). No migration was observed along the Black Sea coast.

Little Ringed Plover *Charadrius dubius*

The Little Ringed Plover migrated all over the country although in small numbers only. Usually no more than a few tens of birds were seen at water bodies: at the Atanassovsko ezero up to 26, at Sokolitsa 22 and at Chelopechene up to 10.

Kentish Plover *Charadrius alexandrinus*

Unlike the preceding species, the migration of Kentish Plover followed only the Black Sea coast. It was observed in the three biotopes off Burgas (Poda, Atanassovsko ezero, and Pomoriisko ezero). The spring migration began at the end of March (25 March), with the largest numbers converging in the Pomoriisko ezero (120 pairs). About 40 pairs remained and nested in the Atanassovsko ezero. On 22 April, four nests with three eggs each, one nest with one egg, and seven empty nests were observed.

Black-tailed Godwit *Limosa limosa*

These were observed at nine of the sites. The census period covered the second half of its spring migration - which ends in early April. Black-tailed Godwits converged on the Pomoriisko ezero (up to 135 birds), Atanassovsko ezero (45 birds), the fisheries at Chelopechene (33 birds), Sokolitsa (18 birds), Nikolaevo (10 birds). By mid-March migrating birds had moulted and had winter plumage. During the second half of March individual birds were seen in winter plumage as well as in breeding plumage; after that they were only seen in breeding plumage. A bird in breeding plumage was also observed on 6 May at Durankulak Lake - one of the presumed nesting sites of the species in Bulgaria.

Curlew *Numenius arquata*

The Curlew was observed throughout the whole period at the Atanassovsko ezero; at first in flocks of up to 26 and during the second half of April and May as separate birds and pairs. The greatest number that converged at the end of March at the Pomoriisko ezero was 62 pairs. At inland water bodies the Curlew was observed in Blagoevgrad and Sokolitsa.

Spotted Redshank *Tringa erythropus*

This is one of the numerous species of waders sighted during the observation period all over Bulgaria. The main wave of migrants passed through early in March and on 22 April (Figure 4). The Spotted Redshank was a regular visitor in great numbers to Atanassovsko ezero, where up to 200 pairs came daily. The birds also converged on the

Trud fisheries (80 birds), the Pomoriisko ezero (35 pairs), and fisheries at Chelopechene (10 birds).

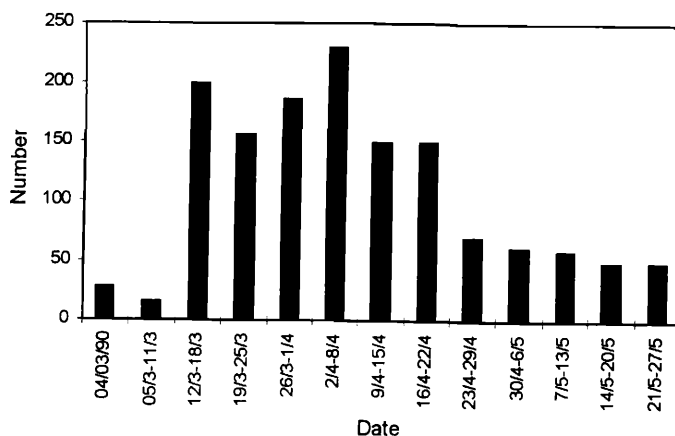


Figure 4 The variation in numbers of Spotted Redshank throughout the census period

Redshank *Tringa totanus*

The Redshank occurred in similar numbers to the Spotted Redshank, however it was sighted on a smaller number of biotopes. Numbers at the Atanassovsko ezero reached up to 500 daily, and up to 60 occurred on Pomoriisko ezero. Migration occurred over a much shorter period - between 12 March and 8 April (Figure 5).

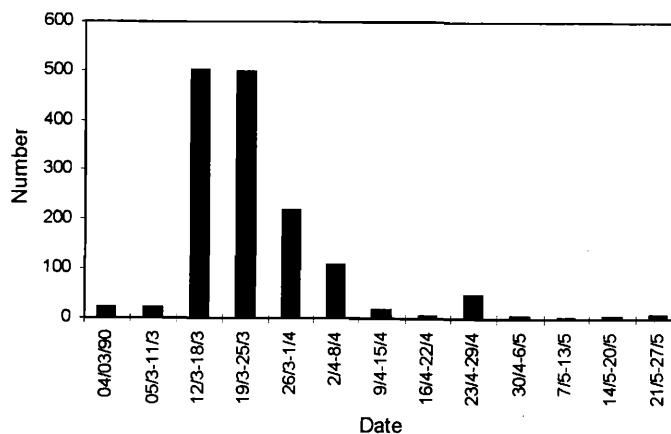


Figure 5 The variation in numbers of Redshank throughout the census period

Marsh Sandpiper *Tringa stagnatilis*

The main spring migration passed through the Atanassovsko ezero, where up to 300 young Marsh Sandpipers were recorded. Individual adults and young also stopped at the fisheries at Chelopechene, Blagoevgrad, Sokolitsa and Trud. Marsh Sandpipers were

sighted between 4 March and 13 May, however the main spring migration was in April.

Greenshank *Tringa nebularia*

The Greenshank occurs in small numbers, although it is more abundant in Western and Central Bulgaria than in the eastern part. The greatest numbers during one census were seen at the Chelopechene fisheries (20), Nikolaevo (20), and Sokolitsa (16). The migration occurred over three months - from early March to the end of May.

Green Sandpiper *Tringa ochropus*

The Green Sandpiper was more numerous in the western half of Bulgaria in March and early April, while in the eastern part greatest numbers were seen in April and early May. At the Atanassovsko ezero the spring migration of Green Sandpiper occurred between 25 March and 13 May (maximum numbers occurring between 8 April and 6 May), with up to 120 birds counted daily. Smaller numbers were observed at the fisheries at Yambol (90), Nikolaevo (30) and Sokolitsa (12).

Wood Sandpiper *Tringa glareola*

The spring migration of the Wood Sandpiper in 1990 began after 16 March. The migration was on a more massive scale during the second half of April and early May. Larger numbers converged in the fisheries of Sokolitsa (up to 121 birds), Trud (106), Atanassovsko ezero (70), Poda marshes (38), the Yambol fisheries (35) and Chelopechene (25).

Common Sandpiper *Actitis hypoleucos*

Several clear waves of migration were observed in the Upper Thracian Plain during spring (early March and mid April), and along the Tundzha river and Black Sea coast (from 22 April to 20 May). At Atanassovsko ezero, the Yambol fisheries and at Trud, flocks of between 24 to 36 birds gathered for several days. In the remaining biotopes several Common Sandpipers were counted.

Turnstone *Arenaria interpres*

Turnstones were observed only along the Black Sea coast (Atanassovsko ezero, Pomoriisko ezero), numbering between one and nine birds, between 25 March to 27 May.

Woodcock *Scolopax rusticola*

A species appearing in small numbers during the spring migration. One was observed on 2 March and 25 March near Blagoevgrad.

Great Snipe *Gallinago media*

This species was observed rarely (one to four birds in a biotope) either inland or along the Black Sea coast.

Snipe *Gallinago gallinago*

Snipe were found regularly, most often in two biotopes: the fisheries of Sokolitsa (in flocks of up to 33) and at Atanassovsko ezero (up to 13 birds). The spring migration ended early in May, however a pair remained in the Poda marshes on 27 May.

Jack Snipe *Lymnocyptes minima*

Up to 5 of these birds were observed in south-west Bulgaria in the fisheries at Blagoevgrad between 4 March and 1 April.

Sanderling *Calidris alba*

A total of nine Sanderling were seen (three birds together plus another six birds) in the Pomoriisko ezero on 27 April and 27 May. No other Sanderling were observed.

Little Stint *Calidris minuta*

Although separate birds were seen in March, the main migration began in mid-April and increased in size until the end of the observation period (Figure 6). The largest number of birds recorded together at one site (Atanassovsko ezero) exceeded 1,000. There were far fewer in the Pomoriisko ezero (up to 150 birds), the rice-fields of Belozem (140) and Durankulak Lake (up to 100). Elsewhere no more than several tens of Little Stint were noted.

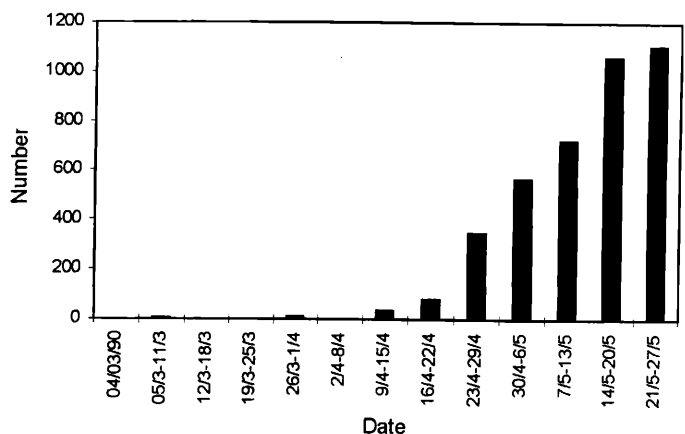


Figure 6 The variation in numbers of Little Stint throughout the study period

Temminck's Stint *Calidris temminckii*

This species was observed at water bodies in western Bulgaria, the fisheries at Chelopechene (up to 20 birds daily) and Blagoevgrad (individual birds).

Dunlin *Calidris alpina*

Spring migration of this species in 1990 was early in March and the observation period included only the end of the migration period. At the Atanassovsko ezero and Pomoriisko ezero, 152 and 400 birds respectively were recorded.

Curlew Sandpiper *Calidris ferruginea*

The Curlew Sandpiper occurred in large numbers. Its migration began after 16 March and increased until the end of May (Figure 7) when up to 2,500 birds gathered at the Atanassovsko ezero. Flocks at Pomoriisko ezero (250 birds), Belozem (170), and Durankulak (80) were one tenth the size. Curlew Sandpiper migrated across south-east and east Bulgaria.

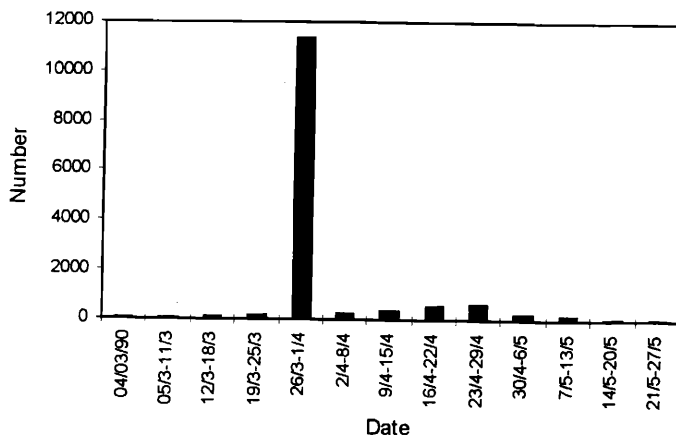


Figure 8 The variation in numbers of Ruff throughout the census period

Concentrations of Ruffs on the Pomoriisko ezero of up to 8,600 birds, at Atanassovsko ezero of 600 birds, at Sokolitsa fisheries of 132 birds and at Durankulak 100 birds were recorded. After 25 March, breeding plumage appeared around the neck.

Over the survey period (4 March to 27 May) a total of 40,802 waders were observed and recorded. The variation in their numbers is shown in Figure 4. Two principal migration waves during the spring migration can be seen. The main one is at the end of March and early April, when 37.7% of the birds passed through; the other during the second half of May (19.8%). A minor wave occurs between these two waves, i.e. in the last days of April (12.5%). The highest numbers of migrating waders in spring 1990 were Ruffs (35% of the total), followed by Curlew Sandpiper (17.7%), Avocet (11%), Little Stint (9.4%), Lapwing (3.7%), Redshank (3.6%) and Spotted Redshank (3.5%).

The Pomoriisko ezero and Atanassovsko ezero, with an average of 3,487 and 1,733 birds daily respectively, are the most important of the sites censused for migrating waders in spring. These lakes, which are also salt works, have been cut off by dykes. During the observation period large numbers of insect larvae occurred - abundant food for waders - in some of the dykes. Of the inland reservoirs, the fisheries at Sokolitsa, inhabited daily by 125 birds, are important to waders. The important role of fisheries in Bulgaria for the migration, wintering and nesting of waders should be noted. Most of the fisheries have been established in marshlands, i.e. along traditional migration routes of birds and the timing of the draining of the basins of fisheries coincides with wader migration. This is the time when many waders converge in drained basins with a silt covered bottom, or with a minimal water level.

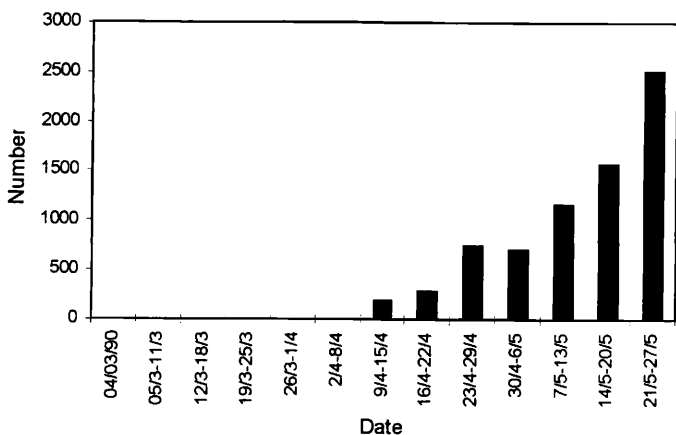


Figure 7 The variation in numbers of Curlew Sandpiper throughout the census period

Broad-billed Sandpiper *Limicola falcinellus*

A rare species. Two birds were observed fairly early, on 11 March at the fisheries of Blagoevgrad. Usually the spring migration of the Broad-billed Sandpiper follows the Black Sea coast as well as coming later - from April to June.

Ruff *Philomachus pugnax*

The migration of this highly numerous wader takes place over an extended period. The maximum numbers of birds cross in a broad front for a very short period in the second half of March (Figure 8). A minor wave of migration occurs a month later - towards the end of April.

Over the period of observation no dye-marked birds were seen. No waders were caught and ringed, or studied in any other way, due to a shortage of nets.

ACKNOWLEDGEMENTS

The authors wish to thank Toni Tonev, Antonia Batschvarova, Petko Cvetkov, Vera Aleksandrova, Dimitar Velez, Emilia Kuntscheva, Ivailo Zafirov, Andrei Dimitrov, Ivan Jeljaskov, Katerina Zareva, Konstantin Bozhilov, Maria Vasileva, Maria Jeljaskova, Ognian Gadularov, Petar Tentshev, Semela Dukova, Christo Ivanov, who all helped in censusing of waders in Bulgaria during March to May 1990.



SPECIES	SITE													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Haematopus ostralegus</i>	5			2		1	2			1	32	2		
<i>Himantopus himantopus</i>				5		5			3	44	696	104		4
<i>Recurvirostra amoena</i>									1	2	3750	730		4
<i>Burhinus oedicephalus</i>												2	2	
<i>Glaroia pratensis</i>				5							44			
<i>Glaroia nordmanni</i>											2			
<i>Vanellus vanellus</i>	11	1		477	320	66	10	20	46		570	3		
<i>Pluvialis squatarola</i>											29			
<i>Charadrius hiaticula</i>			3						12					
<i>Charadrius dubius</i>	23	4		68		23		1	1		128			
<i>Charadrius alexandrinus</i>										6	617	277	2	
<i>Limosa limosa</i>	87		1	35				10		1	130	178		
<i>Numenius arquata</i>		1		2					1	11	91	78		1
<i>Tringa erythropus</i>	17	1	3	6					1	11	1282	35		
<i>Tringa totanus</i>	23			17					17	2	1327	100		
<i>Tringa stagnatilis</i>	3	1		2		1					693			
<i>Tringa nebularia</i>	50			8				20		4	12	2		
<i>Tringa ochropus</i>	15		5	44			10	30	178		353			
<i>Tringa glareola</i>	71			263		106	14		39	38	191	39		
<i>Actitis hypoleucos</i>	5	3		18		35			70	2	82		1	4
<i>Arenaria interpres</i>													1	
<i>Scolopax rusticola</i>		2												
<i>Gallinago media</i>	3	3		7								1		2
<i>Gallinago gallinago</i>	1	2	2	107			2			1	51			
<i>Lymnocyphes minutus</i>		9												
<i>Calidris alba</i>		1										9		
<i>Calidris minuta</i>	51	10		20			140				3273	267		100
<i>Calidris temminckii</i>	23	3												
<i>Calidris alpina</i>											158	661		
<i>Calidris ferruginea</i>				6			170		69	19	6616	256		80
<i>Limicola falcinellus</i>		2												
<i>Phalaropus pugnax</i>	48	35		466			60				2380	2612		100

Table 1 Results of censusing waders in Bulgaria, March-May 1990