

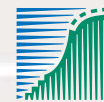
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Waterbirds around the world

A global overview of the conservation,
management and research of the
world's waterbird flyways

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Monitoring of waterbirds at Bourgas wetlands, Bulgaria

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The Bourgas wetlands are the most important ornithological complex in Bulgaria and play a significant role in the conservation of biodiversity in the country. In 1984 Atanasovsko Lake was declared a Ramsar site. Since February 2003, three further sites have gained Ramsar status: Pomoriysko Lake – 814 ha, Vaya Lake – 2 900 ha and Poda Lagoon, including Foros Bay – 307 ha. These sites have been important for many international and Bulgarian ornithologists since the second half of the 19th century (Reiser 1894, Jordans 1940, Patev 1950, Mountfort & Fergusson-Lees 1961, Prostov 1964, Nankinov & Darakchiev 1977, Michev & Profirov 2003, Michev *et al.* 2004).

This paper presents the results of the monthly ornithological monitoring of the Bourgas wetlands from 1996 to 2002. The monitoring covered all natural and some selected artificial wetlands in the Bourgas wetland region, with a total area of c. 9 500 ha. All data were collated to form a single “average” year. This hypothetical year starts with spring migration (March, April and May), followed by the breeding season (June and July), autumn migration (August, September, October and November) and winter (December, January and February). Aerial surveys were conducted by plane and helicopter to count birds breeding in colonies in the reed beds of lakes and to obtain the exact positions of all breeding localities.

Of the 153 species of waterbirds found in the region six are residents, 48 are breeding summer visitors, 34 non-breeding summer visitors, 105 migrants, 92 winter visitors and 17 vagrants. These results indicate that the Bourgas wetlands have the highest diversity of waterbird species during migration time. Highest numbers are observed in the winter period, with large concentrations of geese, ducks, diving ducks, waders etc. During the breeding season, species diversity is relatively poor. The highest number of waterbird species in a single monitoring scheme was in September 1999, with 71 species recorded and

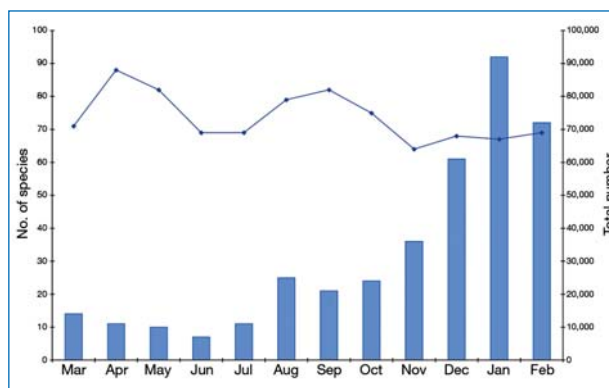


Fig. 1. Average total numbers and average species number of waterbirds in all Bourgas lakes.

the highest total number of waterbirds recorded was in December 2000, with 186 236 individuals. The seasonal dynamic of average total numbers of waterbirds and average species numbers are presented in Fig. 1, with the average monthly numbers of all waterbirds at the different lakes of the Bourgas wetlands presented in Fig. 2.

The biggest concentrations of waterbirds were recorded during the winter months from December to February in the freshwater basins of Vaya and Mandra lakes. The ten most numerous waterbird species in the Bourgas wetlands are presented in Table 1.

The results obtained indicate that the Bourgas wetlands are of international importance for many waterbird species. Among them are several globally threatened species with the maximum numbers recorded as follows: Pygmy Cormorant *Phalacrocorax pygmeus* 10 600 in December 1999; Dalmatian Pelican *Pelecanus crispus* 647 wintering in January 1999, Red-breasted

Table 1. Bourgas wetland monthly average numbers of the ten most numerous waterbird species in descending order of their highest average monthly numbers.

Species	Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
<i>Anser albifrons</i>		666	8	1	2	0	0	0	75	2	3 927	45 545	40 456
<i>Aythya ferina</i>		1 598	432	156	81	419	907	1 549	6 372	11 448	14 387	9 566	7 879
<i>Fulica atra</i>		1 703	194	26	36	103	1 180	1 946	3 793	5 843	10 859	12 000	7 065
<i>Anas platyrhynchos</i>		1 002	222	108	518	247	798	2 032	2 334	2 663	9 232	6 298	4 009
<i>Aythya fuligula</i>		729	137	2	1	14	10	7	835	627	2 946	5 602	7 176
<i>Larus ridibundus</i>		231	592	302	350	3 299	5 962	3 118	1 505	1 304	2 184	1 438	1 102
<i>Phalacrocorax carbo</i>		769	609	628	837	742	1 395	1 520	2 203	2 178	4 138	3 969	2 654
<i>Branta ruficollis</i>		1	0	0	0	0	0	0	0	0	15	3 981	676
<i>Phalacrocorax pygmeus</i>		1 071	433	33	5	7	67	134	260	787	3 626	2 710	513
<i>Anas crecca</i>		364	104	5	2	1	24	314	1 099	2 025	3 153	976	872

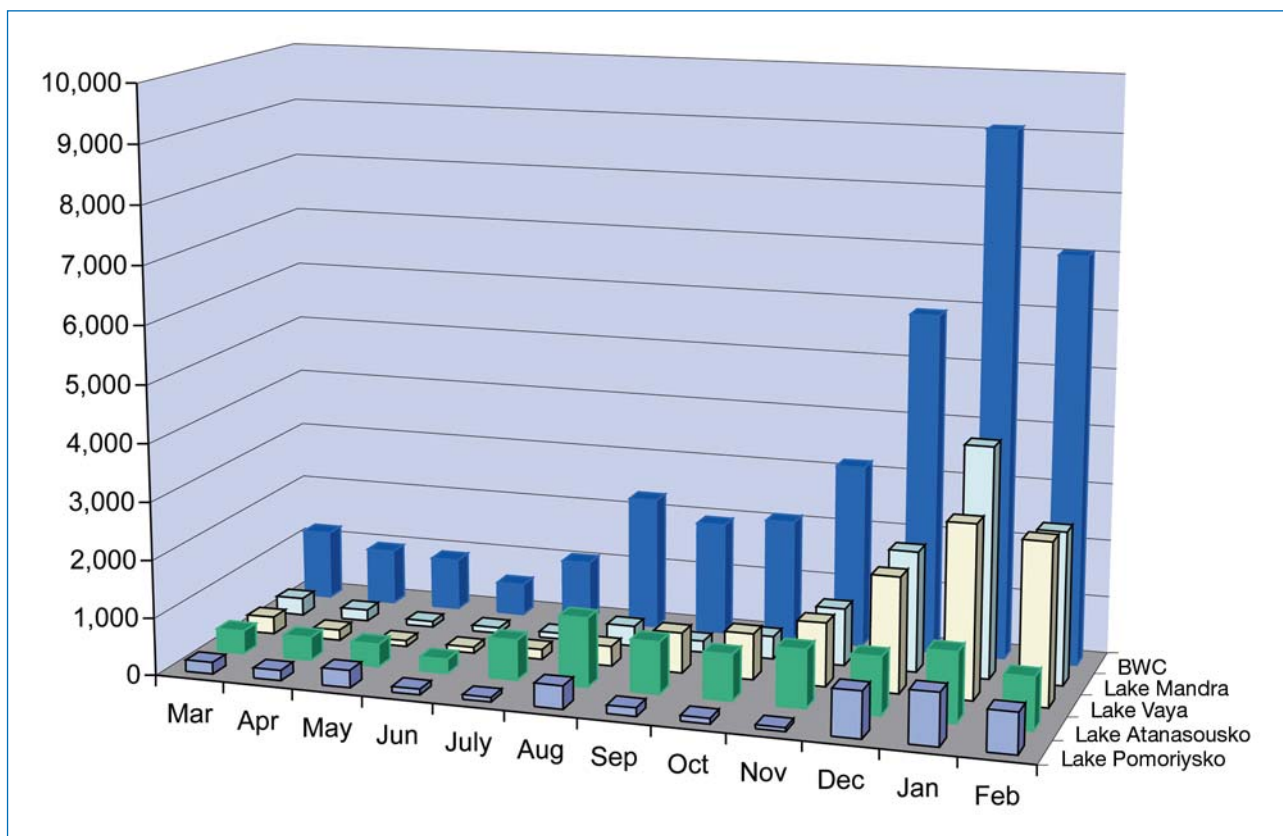


Fig. 2. Average monthly numbers of all waterbirds seen at the different Bourgas Lakes.

Goose *Branta ruficollis* 23 738 in January 1996, White-headed Duck *Oxyura leucocephala* 2 260 in March 1999, Ferruginous Duck *Aythya nyroca* 111 in September 1999.

With so many Ramsar sites in one ecological complex the perspective of our future activities is very clear; to develop the project "Bourgas Wetlands" to establish a National Wetland Center and increase international cooperation.



Fig. 3. Bourgas Ramsar sites map. Source: Ramsar Sites Information Service (RSIS); © Wetlands International.

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