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WINTERING WATERFOWL OF SERBIAN PORTION OF DANUBE RIVER: COUNTS 1999-2003

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IWC (International Water Bird Census) represents the greatest survey program of biodiversity in the world that deals with the birds of wetland habitats. Information that is gathered by census method of IWC in six Eurasian regions is used in order to estimate the size of winter populations of wetland birds, also changes in size and distribution of these populations. Danube represents an important economic and trade connection of Eastern and Middle Europe. Besides, Danube freezes over either not at all or very rarely, and as such represents an important stop for the winter migrants, as during the winter it provides them food and shelter. Natural History Museum in Belgrade counts birds on the Serbian part of Danube since 1982. The results processed for this report were collected in the standardized period 1999-2003. Most birds were recorded on 1999, 203635 individuals from 36 species (least recorded number). The greatest number of species (43) was recorded in 2003. During the administering of IWC, on the Serbian part of the Danube most ducks were recorded, both diving ducks and surface feeding ducks. In last several years there is a recorded increase in numbers of Eurasian Coots (*Fulica atra*) and Mute Swans (*Cygnus olor*).

Key words: Danube, IWC, count, waterfowl

INTRODUCTION

The main goal of this paper is to estimate the sizes of winter bird populations at Danube, but also it is a try to valorise birds of wetland habitats on European level, that is, determination of importance of Danube as an important wintering area for birds of water habitats not only on national but primarily on international level. It is important to note that gathered results might be used to better protect the river itself, the species that breed or winter along the river, as assets of inestimable value for all eight countries through which the Danube flows.

Birds of wetland habitats are good indicators of present state of a certain wetland ecosystem, its richness and diversity. Their monitoring and follow-up enables better understanding of regional as well as intercontinental changes and processes. Therefore, since 1967, within the International Water Bird Census (IWC), information is collected on winter movements of birds of water habitats. In former Yugoslavia and nowadays in Serbia and Montenegro this has been done since 1982 on all larger water surfaces. Especially important are data from Danube (Puzović et al 1988; Paunović et al 1994), as this river is the most important wetland system for Serbia. Danube has a wide flood area, dominated by swamps and marshes, which are during the summer period important for breeding of a large number of birds. Besides, the Danube as a rule extremely rarely freezes during the winter,

and therefore it represents an important station for winter migrants, as during cold months it provides food and shelter.

MATERIAL AND METHODS

The main method used in this paper is matched with standards of IWC, recommended by Wetlands International, as a rule between January 10th and January 25th (1999-2003).

The winter census includes almost all length of Danube's flow through Serbia (within the international boundaries with Hungary and Romania), 539 km out of a total of 588 km. Counting begins from the 1434th river kilometer (Bezdan) and finishes at the 863rd kilometer, at the Hydroelectric Plant Djerdap II. According to the characteristics of habitats along the Danube itself, the river is divided in seven equal-sized sectors, with length of about 80 km (Fig 1). Starting with the boundary with Hungary, sectors are as following: Sector I Bezdan-Vukovar; sector II Vukovar-Novı Sad; sector III Novi Sad-Belgrade; sector IV Belgrade-Morava; sector V Morava-Golubac; sector VI Golubac-Hydroelectric Plant Djerdap I; sector VII Hydroelectric Plant Djerdap I- Hydroelectric Plant Djerdap II.

In January 1999 and 2000, birds were counted from IV to VII sector, in January 2001 in sectors I, II, IV and V, and in 2002 in sectors I, III, IV and V. Only in 2003 were the birds counted in all seven sectors.

The team participating in IWC is composed of four members, who travel by boat, down the river. Counting is done in such a way that each member of the team records each present species and estimates its abundance. During the winter bird census on the Serbian part of Danube, participants are employees of Natural History Museum in Belgrade and Institute for Biological Research «Dr Siniša Stanković» as well as undergraduate biology students.

RESULTS

Although the winter census of birds in Serbia is administered since 1982, this paper deals with the results from last five years. Within this period, 40 species were recorded altogether, and 22 of these species belong to Waterfowl (Anatidae and *Fulica atra*): Mute Swan (*Cygnus olor*), Red-breasted Goose (*Branta ruficollis*), Graylag Goose (*Anser anser*), White-fronted Goose (*Anser albifrons*), Bean Goose (*Anser fabalis*), Mallard (*Anas platyrhynchos*), Gadwall (*Anas strepera*), Pintail (*Anas acuta*), Wigeon (*Anas penelope*), Teal (*Anas crecca*), Shoveler (*Anas clypeata*), Shelduck (*Tadorna tadorna*) Tufted Duck (*Aythya fuligula*), Pochard (*Aythya ferina*), Ferruginous Duck (*Aythya nyroca*), Goldeneye (*Bucephala clangula*), Velvet Scoter (*Melanitta fusca*), Eider (*Somateria mollissima*) Red-breasted Merganser (*Mergus serrator*), Goosander (*Mergus merganser*), Smew (*Mergus abellus*) and Coot (*Fulica atra*). A certain number of geese could not be identified at a species level.

Total number of individuals and species for each studied year is presented in Table 1.

Finally, medium value of number of species was calculated (21) as well as total average number of individuals (214897) for the whole studied period.

Table 1. Number of species and individuals by sectors

Year	Number	Sector							Total
		1	2	3	4	5	6	7	
1999	Indiv				8658	13594 9	45465	135 63	20363 5
	Species				19	27	16	22	30
2000	Indiv				15295	96247	22654	188 21	15301 7
	Species				18	26	19	25	30
2001	Indiv	14152	10000		16808	24533			65439
	Species	19	19		15	25			28
2002	Indiv	57972		3864 7	25133	34462			15265 8
	Species	23		23	18	25			30
2003	Indiv	12523	7357	3322 9	9255	10494 2	17082	258 44	21023 2
	Species	22	17	23	19	30	23	28	35
Mean average	Indiv	28215	8678	3593 8	15030	79227	28400	194 09	21489 7
	Species	21	18	23	18	27	19	25	21

Greatest number of species was recorded in sector V, and smallest in sector II (Figure 1). It is also important to stress that number of species increases from sector I to sector V, reaching its maximum in sector V. This sector includes up to 37% of total medium value (214897) of counted individuals.

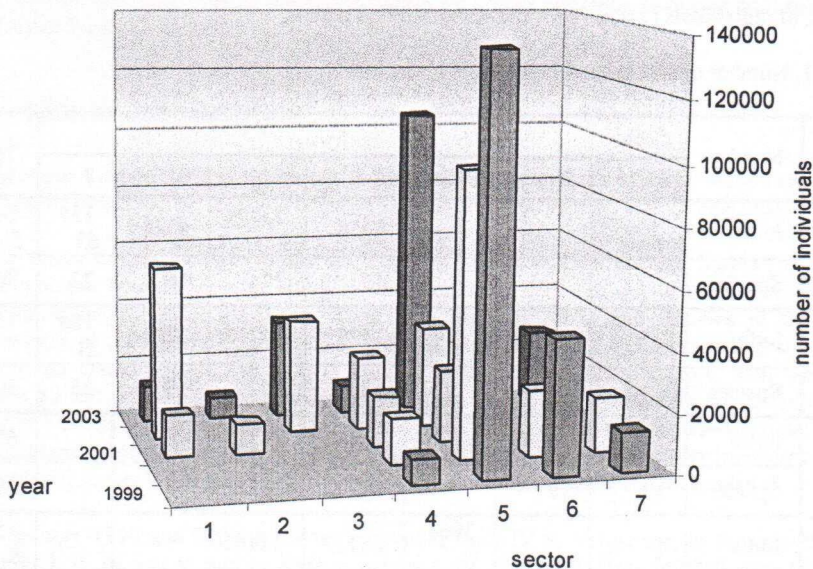


Figure 1. Total number of species by sectors during the five-year study.

Out of the total number of recorded individuals, percentage of *Anas platyrhynchos* in sector V during the five-year census was 9.35%. *Aythya ferina* is in this part of Danube in January present with 11.83%, *Aythya fuligula* with 2.7%, and *Bucephala clangula* with 6.53%. This sector also has a large number of individuals of *Fulica atra* that represent 7.79% out of total number of individuals. *Phalacrocorax carbo* is a species that does not belong to Waterfowl sensu stricto, but its number increases significantly. It is represented with 1.32%, recorded in sectors III and I. Species such as *Mergus albellus* and *Mergus merganser* have been recorded only in sectors V and VI. Other Waterfowl species are equally distributed throughout all sectors, with a tendency for their number to increase in sectors I, III and V.

Analysis of results gathered through IWC can be used to evaluate the capacity of Danube considering the birds of wetland habitats on regional level, especially based on criterion 3c of Ramsar Convention (Gilissen et al., 2002). Out of all 40 recorded species in Danube flow through Serbia, only seven species are considered to be of great importance by the criterion 3c (Table 2). According to our results, all 75% of winter population of *Mergus albellus* from the region Eastern Mediterranean/Black Sea winters on Danube, and that increases the great value of this river. Also we should not neglect the second most abundant species, *Bucephala clangula*, whose percent value on Danube is all 56% out of whole population within the region. *Anas platyrhynchos* is represented with 13.9%, which is also a piece of data that should not be forgot.

Table 2. Species that are considered to be of great importance by the criterion 3c

Species	POP	Prag 1%	%
<i>Phalacrocorax carbo</i>	6.800	680	9.8
<i>Anas platyrhynchos</i>	50.000	5.000	13.9
<i>Aythya ferina</i>	28.000	1.400	9.9
<i>Aythya fuligula</i>	7.200	720	7.0
<i>Bucephala clangula</i>	13.600	1.360	56
<i>Mergus albellus</i>	4.800	480	75
<i>Fulica atra</i>	20.000	2.000	2.1

DISCUSSION

Distribution of species by sectors is changeable and most probably depends on characteristics of habitats within the given sector, as it is correlated with differences in depth of Danube, width of its flood zone, speed of water flow, presence or absence of emergent vegetation, presence of tributaries and other effects.

Within the upper part of Danube (sectors I-III), width of the river is not great, but from the mouth of Tisza River width of Danube slowly increases. In the region of sector V (down river from Belgrade), the river is widest, and the surrounding area is rich in swamps, marshes, fishponds, river islands and flooded forests, so due to the suitable feeding conditions in this sector the greatest number and diversity of birds are recorded. Flow of Danube in sector V is greatly slowed down, which is also suitable for appearance of a large number of individuals. In this sector, important are the presence of *Anas platyrhynchos* and *Fulica atra*, followed by *Phalacrocorax carbo*, *Phalacrocorax pygmaeus*, *Aythya ferina*, *Aythya fuligula* and *Bucephala clangula*. In this sector three species of geese were regularly recorded: *Anser anser*, *Anser albifrons* and *Anser fabalis*.

Comparison with results of Paunović et al. (1994) in the same locality for the period 1988-1992 shows that the number of individuals as well as number of species in this period is greater both in average values and absolute values. However, there is matching with the greatest average abundance of individuals in sector V. Divergence is recorded in sectors with smallest average number of individuals. In period 1988-1992 that was sector VI, while during the newest studies it was sector II.

It is very important to notice that sectors that include mouths of tributaries (I-Drava; III-Tisza; V-Morava) show significant increase in number of individuals. Large aggregations of

birds in these areas is caused by presence of sufficient quantity of nutritive matter coming through mentioned watercourses, numerous shallows, but also by presence of aquatic vegetation that presents a good shelter to a large number of individuals of Waterfowl. In contrast to these, in sectors II, IV and VII the smallest number of individuals is recorded. Besides, in sectors II and IV in last several years a hunting pressure was increased on a large number of species of ducks and geese, which is certainly a reason why in these regions there are few birds. Also, in sector IV where Belgrade is situated, as an administrative but also industrial city with majority of country's citizens, there is a great pollution as well as increased water traffic, so these are also possible reasons for lack of larger number of individuals in this region.

Depth of river increases from sector I toward sector VII, and maximum depth is reached in sector VI in Djerdap Gorge, that is, at the exit from this sector, where the Hydroelectric Plant Djerdap II is situated. In this sector, Danube is squeezed between steep mountain cliffs, and the width of river itself is not very big, so birds do not have a place to hide, and food is also more difficult to reach. A small number of species and individuals are recorded, and the only noticeable ones are *Mergus albellus* and *Mergus merganser*, and in lesser scope few species of diving ducks. Greatest number of these species of ducks was counted in sector VII, where Danube once again becomes wide, slow and much shallower than is sector VI. Also, shores of Danube here abound with aquatic vegetation, which presents a good shelter and protection for many species, primarily *Anas penelope*, *Anas acuta*, *Anas strepera*, *Anas crecca*, and somewhat less for *Anas platyrhynchos*.

Analysis of data of IWC shows that a large number of species of Waterfowl, especially ducks, during the winter migrates and overwinters in Eastern Europe, that is, in region Eastern Mediterranean/Black Sea, which also includes Serbia and Montenegro. Our results show that on Danube, during the winter census in period 1999-2003, 16 species of ducks were recorded. For some species that migrate from northwest of Europe, Danube represents the only refuge.

It is important to note that number of individuals increases every year, so our estimate of abundance of mentioned species, when compared with the period 1997-1999, presented by IWC, must be much higher. However, these results match the analysis and estimate of IWC that the largest number of individuals of those Western Palearctic species that we presented here winters exactly in this region.

CONCLUSIONS

Having in mind all presented data and facts; we may conclude that the Serbian part of Danube represents an important station for wintering of many waterfowl of Western Palearctic. Due to numerous swamps, marshes and fishponds that especially appear in its middle flow; the Danube represents an important refuge center during the cold winter months, especially for species *Anas platyrhynchos*, *Aythya ferina*, *Aythya fuligula*, *Bucephala clangula*, *Mergus albellus* and *Fulica atra*. This is especially pronounced in sectors V and III, where a large number of species reaches their maximum. Sectors where number of species is small may be a signal that something is wrong, that the river is greatly polluted or that the hunting pressure is increased.

Therefore the Serbian part of Danube, as a winter station for many species of Waterfowl is of incalculable value not only for Serbia, but also for whole Europe. Therefore, it is necessary to understand its importance and role in life of birds that come in winter to our region looking for shelter and food, in order to decrease hunting pressure, implement better measurements of protection of the river itself, environment, as well as numerous rare and threatened bird species that visit us in winter.

REFERENCES

- Glisen, N., Haanstra, L., Delany, S., Boere, G., Hagemeyer, W. 2002. Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1997, 1998 and 1999. Results from the International Waterbirds Census. Wetlands International Global Series No. 11, Wageningen, Netherlands.
- Paunović, M., Ham, I., Puzović, S. 1994. The wintering of waterfowl on the river Danube (Yugoslavia) 1988-1992. The sixth International Congress on the Zoogeography and Ecology of Greece and the Adjacent Regions. Greece, pp. 319-324.
- Puzović, S., Ham, I., Paunović, M., Stajić, D., Mandić, R., Pavlović, D. 1988. Zimsko prebrojavanje ptica na Dunavu (jugoslovenski deo) i donjem toku Save januara 1988. IV Kongres ekologija Jugoslavije. Ohrid. Abstrakt, pp. 346-347.
- Vasić, V., Puzović, S., Vizi O. 1992. Capacities of Skadar lake in relation to European Regional Population of Water birds. Glasnik Republickog Zavoda za zaštitu prirode-Prirodnjackog muzeja Podgorica. 25: 53-62.