

THE CENSUS OF THE WATERBIRDS FROM THE VÂLCELE RESERVOIR IN JANUARY 2000 – 2004

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Key words: *Vâlcele Reservoir, ornithological researches, protection*

INTRODUCTION

The census of the waterbirds is a program of valuation of birds on long term, organized by Wetlands International, beginning from 1967. It is carried on every year in 47 countries, between 10th and 20th January. In Romania this program began when the Romanian Society of Ornithology was established.

MATERIAL AND METHOD

The Argeș River has its origin in the glacial hollows of the ridge of the Făgăraș Mountains, between Negoiu and Moldoveanu Peaks, and it drains series of reservoirs were arranged. They produce electric energy and these determined big changes in the qualitative and quantitative structure of the ornithofauna, determining in the same time a strong antropization of the natural landscape (Figure 1).

The researches were done on the Vâlcele Reservoir that has a surface of 408 ha. This is a eutrophic reservoir and regarding the quality of the water, it is placed in the second category of quality.

The hills and the meadows of the neighborhoods are covered with deciduous forest, orchard and agricultural zones. The typical paludous vegetation is not rich and occupies little surfaces especially to the „tail” of the basin.

The observations were made on 15th of January 2000, 12th January 2001, 11th January 2002, 11th January 2003 and 17th January 2004.

The researches were done on the both sides of the reservoir, the avifauna of the battered perimeter of the reservoir being observed. 10x15 binoculars were used.

RESULTS AND DISCUSSIONS

During the researched period, on the five visited reservoirs, 51 species of birds were observed. On the Vâlcele Reservoir were observed 35 species belonging to 10 orders, 17 families and 31 genuses. In the year 2000, 13 species were met, in 2001 – 3 species, in 2002 – 15 species, in 2003 – 19 species and in 2004 – 17 species.

the most part of the Southern Slope of these mountains, the sub – Carpathians corresponding zone, the Eastern side of the Getic Piedmont and a large zone of the Romanian Plain. After 1960,

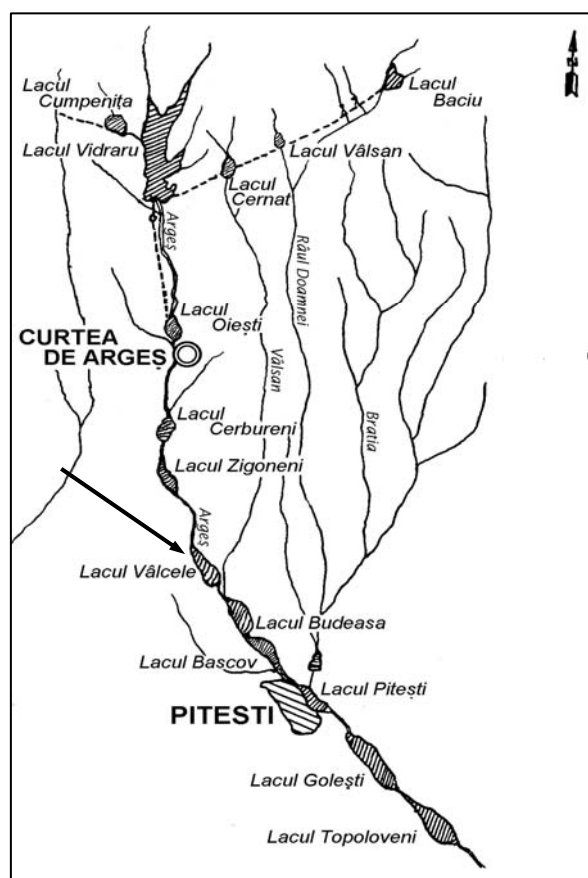


Fig. 1. The upper basin of the Argeș River with the position of the Vâlcele reservoir

In the researched zone there are 13 species of Passeriformes (37,14% of the total observed species), 7 species of Anseriformes (20%), 4 species of Charadriiformes (11,42%), 3 species of Falconiformes (8,57%), 2 species of Ciconiiformes (5,71%), 2 species of Gruiformes (5,71%) and Podicipediformes, Pelecaniformes, Galliformes and Piciformes each having 1 species (2,85%) (Table 1, Figure 2).

There were observed 3561 exemplars, the most of them being observed in 2002 (1398 exemplars) and the least in 2001 (84 exemplars). The most numerous of the species belonging to the wet zones were: Coots (*Fulica atra*) (1483 exemplars), Mallard (*Anas platyrhynchos*) (1085 exemplars) and Yellow-legged

Gull (*Larus cachinnans*) (432 exemplars) and the less numerous were: Great White Heron (*Egretta alba*), Whooper Swan (*Cygnus cygnus*), Tufted Duck

(*Aythya fuligula*), Snipe (*Gallinago gallinago*) and Common Gull (*Larus canus*) having one or two exemplars each.

Table 1. The situation of the species of birds observed on Vâlcele Reservoir

No.	Species	Year					Total	Frequency	SPEC Category	The status of endanger
		2000	2001	2002	2003	2004				
I. Ord. Podicipediformes										
1	<i>Tachybaptus ruficollis</i>	62		29	56	20	167	C	N-SPEC	S
II. Ord. Pelecaniformes										
2	<i>Phalacrocorax pygmaeus</i>			1		1	2	Rr	SPEC 2	V
III. Ord. Ciconiiformes										
3	<i>Egretta alba</i>			1			1	R	N-SPEC	S
4	<i>Ardea cinerea</i>	1		2	2		5	Rc	N-SPEC	S
IV. Ord. Anseriformes										
5	<i>Cygnus olor</i>		3	56	80		139	Rc	N-SPEC	S
6	<i>Cygnus cygnus</i>			1			1	R	SPEC 4	S
7	<i>Anas platyrhynchos</i>	80	80	577	168	180	1085	C	N-SPEC	S
8	<i>Anas crecca</i>	15			30		45	Rr	N-SPEC	S
9	<i>Aythya fuligula</i>			2			2	R	N-SPEC	S
10	<i>Aythya ferina</i>			24	7		31	Rr	SPEC 4	S
11	<i>Bucephala clangula</i>				10	1	11	Rr	N-SPEC	S
V. Ord. Falconiformes										
12	<i>Buteo buteo</i>				2	1	3	Rr	N-SPEC	S
13	<i>Accipiter gentilis</i>	1			1		2	Rr	N-SPEC	S
14	<i>Accipiter nisus</i>			1			1	R	N-SPEC	S
VI. Ord. Galliformes										
15	<i>Perdix perdix</i>				12	22	34	Rr	SPEC 3	V
VII. Ord. Gruiformes										
16	<i>Fulica atra</i>	50		550	570	313	1483	C	N-SPEC	S
17	<i>Gallinula chloropus</i>	15		2	4		21	Rc	N-SPEC	S
VIII. Ord. Charadriiformes										
18	<i>Gallinago gallinago</i>					2	2	R	N-SPEC	S (P)
19	<i>Larus cachinnans</i>	10		129	150	143	432	C	N-SPEC	S (P)
20	<i>Larus canus</i>		1				1	R	SPEC 2	D
21	<i>Larus ridibundus</i>			14			14	R	N-SPEC	S
IX. Ord. Piciformes										
22	<i>Picus canus</i>				1		1	R	SPEC 3	D
X. Ord. Passeriformes										
23	<i>Anthus spinoletta</i>					1	1	R	N-SPEC	S
24	<i>Lanius excubitor</i>				1		1	R	SPEC 3	D
25	<i>Pica pica</i>	6		9	3		18	Rc	N-SPEC	S
26	<i>Corvus frugilegus</i>					5	5	R	N-SPEC	S
27	<i>Corvus corone cornix</i>	1					1	R	N-SPEC	S
28	<i>Corvus corax</i>					11	11	R	N-SPEC	S (P)
29	<i>Turdus merula</i>	1			2		3	Rr	SPEC 4	S
30	<i>Turdus pilaris</i>	4			5		9	Rr	SPEC 4	S
31	<i>Parus caeruleus</i>				1	1	2	Rr	SPEC 4	S
32	<i>Passer domesticus</i>					2	2	R	N-SPEC	S
33	<i>Passer montanus</i>					2	2	R	N-SPEC	S
34	<i>Carduelis carduelis</i>	15				5	20	Rr	N-SPEC	S (P)
35	<i>Emberiza citrinella</i>					3	3	R	SPEC 4	S (P)
Total exemplars		261	84	1398	1105	713	3561			

Legend:

The **frequency**: R – rare species; Rr – relative rare species; Rc – relative common species; C – common species;

The **SPEC Category**: SPEC 2 – species concentrated in Europe but having an unfavourable status of conservation; SPEC 3 – species which are not concentrated in Europe and which are not favourable status of conservation; SPEC 4 – species which are not concentrated in Europe and which have status favourable of conservation; Non-SPEC – species are not make the object of the protection in European plan;

The **endanger status**: S – safety species; D – species in moderate decline; V – vulnerable species.

Regarding the frequency (Figure 3), 16 species (*Egretta alba*, *Cygnus cygnus*, *Aythya fuligula*, *Accipiter nisus*, *Gallinago gallinago*, *Larus canus*, *Larus ridibundus* etc.) are rare (45,71%), 11 species (*Phalacrocorax pygmaeus*, *Anas crecca*, *Aythya ferina*, *Bucephala clangula* etc.) are relatively rare

(31,43%), 4 species (*Ardea cinerea*, *Cygnus olor*, *Gallinula chloropus* and *Pica pica*) are relative common (11,43%),

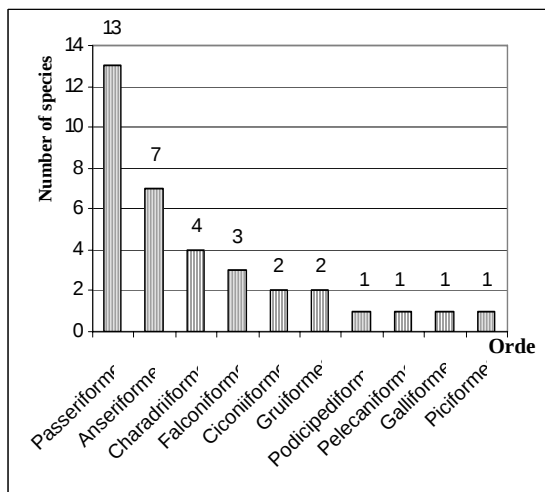


Fig. 2. The birds' species distribution by orders

and 4 species (*Tachybaptus ruficollis*, *Anas platyrhynchos*, *Fulica atra* and *Larus cachinnans*) are common (11,43%).

Regarding the protection (Figure 4): 2 species (*Phalacrocorax pygmaeus* and *Larus canus*, 5,71%) belong to SPEC 2 Category (species concentrated in Europe and having an unfavourable conservation status), 3 species (*Perdix perdix*, *Picus canus*, *Lanius excubitor*, 8,57%) belong to SPEC 3 category (species not concentrated in Europe and having an unfavourable conservation status), 6 species (17,14%) belong to SPEC 4 (species not concentrated in Europe and having a favourable conservation status) and 24 species (68,57%) considered Non – SPEC. These 24 species are not the objective of the protection European plan.

We worked the obtained data using the index of relation (I_R):

$$I_R = N_A / N \times 100,$$

with: N_A - the number of exemplars of the order A;

N - the total number of exemplars (Table 2).

We present the numeric variation of each order in the researched period. These variations represent the I_R values in a system of co-ordination with the static axe - A_S and the dominant axe - A_D , calculated with the formulas:

$$A_S = 100/N,$$

$$A_D = 2 \times A_S,$$

with N - the number of censused orders.

Results: $A_S = 10$ and $A_D = 20$.

As it results from the figure 5, the Anseriformes are always over dominant, as well as the Gruiformes, except 2001, when they were not present. The Charadriiformes are dominant in 2002 and over dominant in 2004. The Podicipediformes are over dominant in 2000 and in the other years complementary. The other orders have fewer shares. If they are considered all together they are dominant in 2000, in the other years being complementary.

Considering the entire period we observed that the Anseriformes and the Gruiformes are over

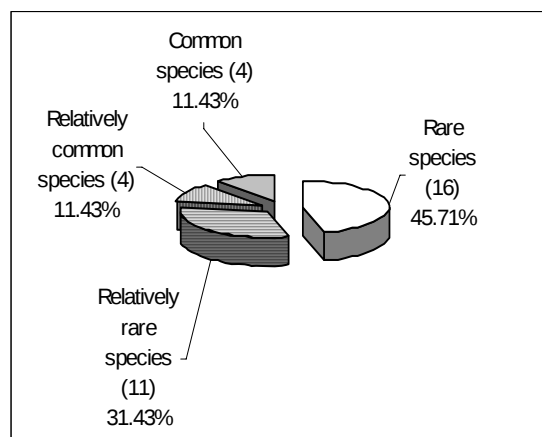


Fig. 3. The distribution of the species of birds according to frequency

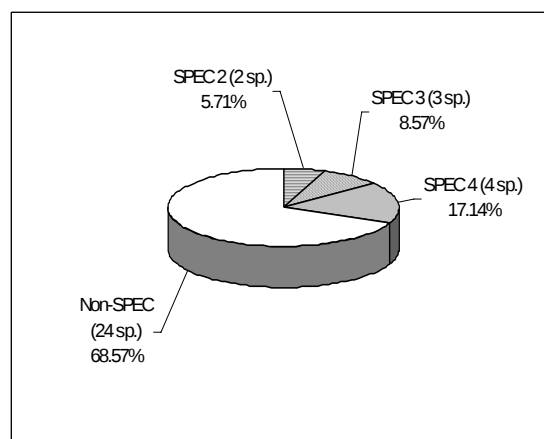


Fig. 4. The distribution of the species of birds according to the SPEC status

dominant, the Charadriiformes are dominant and the Podicipediformes and the other orders are complementary (Figure 6).

Table 2. The I_R value of the orders presented in the avifauna in the researched period

No.	Order	2000	2001	2002	2003	2004	Period
1	Anseriformes	38	100	47.5	30.8	25.4	36.9
2	Gruiformes	26	0	39.7	60.1	43.9	42.2
3	Charadriiformes	0	0	10.3	0	20.3	12.6
4	Podicipediformes	24.8	0	2.0	5.8	2.8	4.6
5	Other orders	11.2	0	0.3	3.1	7.4	3.5

CONCLUSIONS

During the census of the waterbirds on the Vâlcele Reservoir between 2000 and 2004, 35 species of birds had been observed belonging to 10 orders, 17 families and 31 genuses.

The most species belong to the order of Passeriformes (13 species), followed by the Anseriformes (7 species) and the Charadriiformes (4 species).

3561 exemplars had been observed, the most of them in 2002 (1398 exemplars); the least of them had been observed in 2001 (84 exemplars).

The most numerous of the species connected with the wet zones were: Coots (*Fulica atra*), Mallard (*Anas platyrhynchos*) and the Yellow-legged Gull (*Larus cachinnans*). The least numerous of them are: Great White Heron (*Egretta alba*), Whooper Swan (*Cygnus cygnus*), Tufted Duck (*Aythya fuligula*), Snipe (*Gallinago gallinago*) and Common Gull (*Larus canus*).

Regarding the frequency, 16 species are rare, 11 species are relatively rare, 4 species are relative common, and 4 species are common.

Regarding the protection: 2 species (*Phalacrocorax pygmaeus* and *Larus canus*, 5,71%) belong to SPEC 2 Category, 3 species belong to SPEC 3 category, 6 species belong to SPEC 4 and 24 species are catalogued as Non – SPEC and they are not the object of the protection European plan.

The Anseriformes are always over dominant, as well as the Gruiformes, except 2001, when they were not present. The Charadriiformes are dominant in 2002 and over dominant in 2004. The Podicipediformes are over dominant in 2000 and complementary in the rest of the time. The other orders are dominant in 2000 and in the other years are complementary.

Considering the entire period the results are: the Anseriformes and the Gruiformes are over dominant, the Charadriiformes are dominant and the Podicipediformes and the other orders are complementary.

REZUMAT

În această lucrare, autorii prezintă rezultatele cercetărilor întreprinse pe lacul Vâlcele în perioada 2000 – 2004 în cadrul Recensământului Păsărilor de Apă organizat în țara noastră de Societatea Ornitologica Română. Au fost descoperite 35 de specii de păsări incluse în 10 ordine și 17 familii. Cele mai numeroase au fost lișițele (*Fulica atra*), rațele mari (*Anas platyrhynchos*) și pescărușii cu picioare galbene (*Larus cachinnans*) iar cele mai puțin numeroase: egretă mare (*Egretta alba*), lebăda de iarnă (*Cygnus cygnus*), rața moțată (*Aythya fuligula*), becațina comună (*Gallinago gallinago*) și pescărușul sur (*Larus canus*). Anseriformele și gruiformele sunt supradominante, charadriiformele sunt dominante iar celelalte ordine sunt complementare. Dintre speciile observate, cormoranul mic (*Phalacrocorax pygmaeus*) și pescărușul sur (*Larus canus*) sunt cele mai amenințate.

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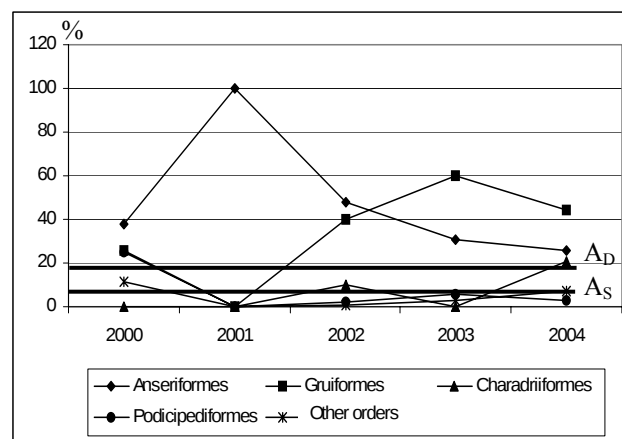


Fig. 5. The dynamic of the orders of birds in Vâlcele Reservoir between 2000 and 2004

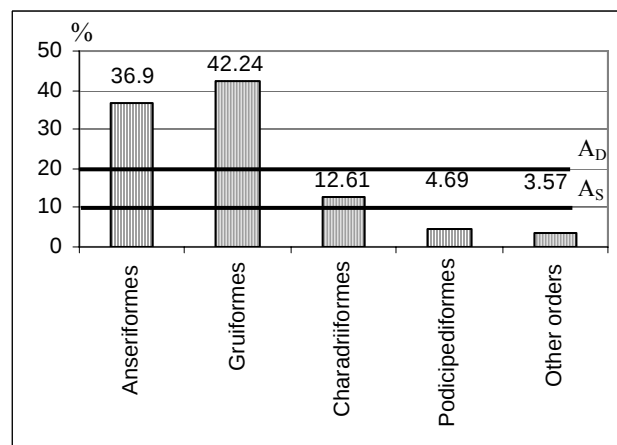


Fig. 6. The medium global participation of the orders at the population of birds on Vâlcele Reservoir

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