

SOME ASPECTS CONCERNING SEASONAL VARIATIONS OF THE BIRD SPECIES FROM THE BASIN OF TAZLAU RIVER

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Abstract. The study presents some aspects concerning the dynamics of the bird species from the Basin of Tazlău River. According to the 6 ecological aspects: prevernal, vernal, estival, serotinal, autumnal and hiemal, the presence, repartition and birds effectives differ. The birds register numerical oscillations both during the ecological aspects within a year and from a year to another.

Keywords: phenological aspects, birds.

Rezumat. Unele aspecte privind dinamica speciilor de păsări din bazinul râului Tazlău. În funcție de cele șase aspecte ecologice: prevernal, vernal, estival, serotinal, autumnal și hiemal, prezența, repartiția și efectivele păsărilor diferă. Păsările înregistrează oscilații numerice pe parcursul aspectelor ecologice dintr-un an și oscilații numerice de la an la an.

Cuvinte cheie: aspecte fenologice, păsări.

Introduction

Between 2000 and 2005 observations concerning the avifauna were made in the Basin of Tazlau River. After researches were made, details concerning ornithofauna' taxonomic composition in the studied area were established, some aspects concerning birds phenology and their seasonal variations were defined.

On the subject of bird species' numerical variations, the obtaining of both qualitative order results (species are present in each season in the Basin of Tazlau River) and quantitative order results (some species' abundance in certain seasons) was intended.

Materials and Methods

Six years of study long several methods were used on the field, methods adapted both to the conditions offered by the area and to the seasonal changes. In hiemal aspect some roads were snow-bounded. In the estival aspect, due to the floods between 2004 and 2005, the access to some observation points was totally or partially interrupted.

Observer's perseverant and discrete presence in the field, with maps, spectacles, compasses and with an adequate outfit made possible birds' inventory in different aspects. The most used method was the method of transects. Where the conditions allowed it, the birds were counted. A qualitative and quantitative analysis of the cumulated observations in the years of study was made. The method of fixed points was used in the forests with high leaf canopy. On the map were written: birds' position given by their trill, birds or nests visual (in estival season).

Results and Discussion

In table no. 5 we included the list of bird species in the studied area. The year limit periods were indicated, periods when some species are present in the Basin of Tazlau River and their phenological category.

Prevernal aspect

In our country the prevernal aspect contains the period between 01.03 and 30.04. From the ornitho-faunistical angle, in this season the spring passage of the most migratory species begins and develop; winter visitors go to north side and the summer visitors arrive. The sylvan area species that wintered in valleys or in forests margin shifted to preferred habitats. Through the thaw of Tazlau's frozen parts the aquatic passage birds find stand places which assure an abundant food. Other species begin to nest.

In prevernal aspect we saw in the area 114 bird species belonging to the orders: Podicipediformes (1), Ciconiiformes (2), Anseriformes (7), Falconiformes (9), Galliformes (5), Gruiformes (4), Columbiformes (1), Strigiformes (7), Caprimulgiformes (1), Coraciiformes (4), Piciformes (9), and Passeriformes (59).

Considering their appurtenance to phenological categories, the existent birds in the Basin of Tazlau in the prevernal system are: summer visitors: 44 (38.6 %), sedentary: 49 (42.98 %), winter visitors: 3(2.63 %), passage: 10(8.77 %), partial migratory: 6 (5.26 %), accidentals: 2 (1.75 %).

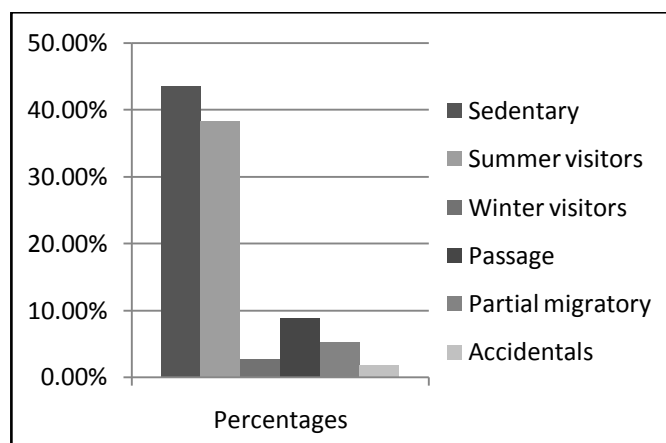


Figure 1. The percentages of the phenological categories for the bird species present in prevernal season.

Table 1. The first observations made on a number of summer visitors' species.

Reg. no.	Species	Migration data (the first observations)	Limits	Average	Years of obs.
1.	<i>Ciconia ciconia</i>	11.04.2000; 27.03.2001; 06.04.2002; 23.03.2003; 14.04.2004; 28.03.2005	23.03.-14.04.	03.04.	6
2.	<i>Falco peregrinus</i>	20.04.2000; 16.04.2001; 21.04.2002; 25.04.2003	16.04.-25.04.	20.04.	4
3.	<i>Falco tinnunculus</i>	10.04.2000; 08.04.2001; 21.04.2002; 13.04.2004; 26.04.2005	08.04.-25.04.	16.04.	5
4.	<i>Falco subbuteo</i>	29.03.2000; 04.04.2001; 16.04.2002; 13.04.2003; 28.03.2005	28.03.-16.04.	07.04.	5
5.	<i>Coturnix coturnix</i>	02.04.2001; 01.04.2002; 06.04.2004;	01.04.-06.04.	03.04.	3
6.	<i>Scolopax rusticola</i>	25.03.2000; 04.04.2001; 17.04.2002; 23.04.2003; 06.04.2004; 12.04.2005	25.03.-23.04.	12.04.	6
7.	<i>Columba palumbus</i>	29.03.2001; 05.04.2004; 16.04.2005	29.03.-16.04.	06.04.	3
8.	<i>Columba oenas</i>	14.04.2002; 26.03.2003; 29.03.2005	29.03.-14.04.	05.04.	3
9.	<i>Streptopelia turtur</i>	27.04.2001; 16.04.2002; 24.04.2003; 14.04.2004; 30.04.2005	14.04.-30.04.	21.04.	5
10.	<i>Cuculus canorus</i>	16.04.2000; 10.04.2001; 13.04.2002;	10.04.-18.04.	14.04.	6

		18.04.2003; 16.04.2002; 11.04.2005			
11.	<i>Asio otus</i>	10.03.2000; 16.03.2003; 10.04.2005	10.03.-10.04.	25.03.	3
12.	<i>Caprimulgus europaeus</i>	30.03.2001; 27.03.2004; 01.04.2005	27.03.-01.04.	29.03.	3
13.	<i>Upupa epops</i>	03.04.2000; 29.03.2001; 16.04.2002 09.04.2003; 31.03.2004	29.03.-16.04.	06.04.	5
14.	<i>Alauda arvensis</i>	27.02.2000; 02.03.2001; 13.03.2002; 16.03.2003; 15.03.2004; 10.03.2005	27.02.-16.03.	07.03.	6
15.	<i>Hirundo rustica</i>	30.03.2000; 28.03.2001; 16.04.2003; 08.04.2004; 08.04.2005	28.03.-16.04.	07.04.	5
16.	<i>Oriolus oriolus</i>	17.03.2000; 08.04.2001; 03.04.2002; 10.04.2003; 31.03.2004; 28.03.2005	17.03.-10.04.	28.03.	6
17.	<i>Delichon urbica</i>	09.04.2001; 13.04.2003; 18.04.2004; 29.03.2005	29.03.-18.04.	08.04.	4
18.	<i>Turdus philomelos</i>	13.03.2000; 19.03.2001; 20.03.2002; 25.03.2003; 17.03.2005	13.03.-25.03.	19.03.	5
19.	<i>Luscinia luscinia</i>	15.04.2000; 20.04.2002; 18.04.2003; 23.04.2005;	15.04.-23.04.	19.04.	4
20.	<i>Luscinia megarhynchos</i>	29.03.2001; 06.04.2003; 14.04.2004; 31.03.2005	29.03.-14.04.	03.04.	4
21.	<i>Sylvia atricapilla</i>	24.04.2000, 26.04.2001; 28.04.2002; 30.04.2003; 01.05.2004; 27.04.2005	24.04.-01.05.	27.04.	6
22.	<i>Phylloscopus sibilatrix</i>	24.04.2000; 30.04.2001; 02.05.2004;	24.04.-02.05.	28.04.	3
23.	<i>Sylvia curruca</i>	09.04.2000; 13.04.2002; 18.04.2003; 10.04.2005	09.04.-18.04.	13.04.	4
24.	<i>Motacilla alba</i>	17.03.2000; 13.03.2001; 12.03.2002; 05.04.2003; 16.03.2004; 18.03.2005	12.03.-05.04.	23.03.	6
25.	<i>Anthus trivialis</i>	09.04.2000; 10.04.2004; 16.04.2005	09.04.-16.04.	12.04.	3
26.	<i>Sturnus vulgaris</i>	05.03.2000; 10.03.2001; 20.02.2002; 15.03.2003, 08.03.2004; 27.02.2005	20.02.-15.03.	03.03.	6
27.	<i>Vanellus vanellus</i>	08.03.2000; 13.03.2001; 18.03.2002; 17.03.2004; 23.03.2005	08.03.-23.03.	15.03.	5

The winter visitors which leave the Basin of Tazlău River in the prevernal season are: *Tachybaptus ruficollis*, *Regulus regulus*, *Bombycilla garrulous* and *Fringilla montifringilla*

Table 2. Migration data of some winter visitor birds in the Basin of Tazlău River.

Reg. no.	Species	Migration data (the first observations)	Limits	Average	Years of obs.
1.	<i>Regulus regulus</i>	29.03.2002; 09.04.2004; 06.04.2005	29.03.-09.04.	03.04.	3
2.	<i>Bombycilla garrulus</i>	23.04.2000; 01.05.2001; 14.04.2003; 06.04.2004; 01.05.2005	06.04.-01.05.	19.04.	5
3.	<i>Fringilla montifringilla</i>	16.04.2002; 22.04.2005	16.04.-22.04.	19.04.	2

Table 3. The dates when some passage species pass in prevernal season above the Basin of Tazlău River.

Reg. no.	Species	Date of observations
1.	<i>Ciconia nigra</i>	18.04.2001; 05.04.2002
2.	<i>Anas querquedula</i>	04.04.2000; 06.04.2003
3.	<i>Anser albifrons</i>	10.03.2001
4.	<i>Aythya fuligula</i>	23.03.2001; 15.04.2002; 04.04.2005
5.	<i>Aquila pomarina</i>	13.04. 2001; 10.04.2003; 31.03.2004
6.	<i>Milvus milvus</i>	28.03.2000; 31.03.2001
7.	<i>Turdus iliacus</i>	22.03.2001; 19.03.2003
8.	<i>Ficedula hypoleuca</i>	18.04.2001

Some passage species were observed only once in the prevernal season in 6 years of study. Others were observed in other year periods, i.e. *Anas platyrhynchos* and *Anas crecca*.

The “Ciconiformes” present, in the prevernal season a numerical maximum; in this aspect both summer visitors (*Ciconia ciconia*), and spring passage (*Ciconia ciconia*, *Ciconia nigra*) arrive. The effectives’ number of *Ciconia ciconia* is improved by the earlier beginning of the brooding.

Anseriformes’ majority met in the studied territory can be observed in this period either as passage species (*Anser albifrons*, *Anas querquedula*, *Aythya fuligula*, *Anas platyrhynchos*), or as accidental species (*Aythya nyroca*, *Aythya marila*).

The most falconiformes are sedentary: *Buteo buteo*, *Accipiter nisus*, and *Accipiter gentilis*. The summer visitors appear (*Falco peregrinus*, *Falco subbuteo*, *Falco tinnunculus*) and passage species pass by: *Aquila pomarina* și *Milvus milvus*.

Although the populations of *Aquila chrysaetos*, do not like human being’ company go down in the valleys, close to human settlements for wintering. The odd individuals were seen coming in the Bistrita Basin Răchitiș area (16.04.2002), where they nested.

The species that improve galiformes’ number in prevernal season is *Coturnix coturnix* which arrives in the area at the beginning of April (02.04.2001- Măgura Hill, 01.04.2002- Bridges, 06.04.2004- Plains). The rest of the galiformes are sedentary: *Bonasia bonasia*, *Tetrao tetrix*, *Tetrao urogallus*, *Perdix perdix*, *Phasianus colchicus*.

Gruiforms number unwieldy increases in prevernal season, now registering the summer visitors’ arrival: *Vanellus vanellus*, *Actitis hypoleucos*, *Crex crex* and *Scolopax rusticola*.

The summer visitors appear between columbiformes in prevernal season: *Columba palumbus*, *Columba oenas*, and *Streptopelia turtur*.

The sole cuculiforms representative appears, being a piece of the present species mosaic in the prevernal aspect (*Cuculus canorus*).

Strigiforms number does not modify very much in this season; only passage populations of the *Asio otus* species aggrandize the landscape.

Among caprimulgiformes, *Caprimulgus europaeus* arrives in the area on March-April.

The coraciiformes which arrive now are: *Merops apiaster*, *Upupa epops* and *Coracias garrulus*.

All the Piciformes are sedentary, disliking the major numerical variations in prevernal season.

The Passeriformes are the most numerous birds which “invade” the studied territory in this season. The summer visitors which arrive are: *Alauda arvensis*, *Lullula arborea*, *Hirundo rustica*, *Delichon urbica*, *Oriolus oriolus*, *Turdus philomelos*, *Saxicola rubetra*, *Saxicola torquata*, *Oenanthe oenanthe*, *Phoenicurus phoenicurus*, *Erithacus rubecula*, *Luscinia luscinia*, *Luscinia megarhynchos*, *Sylvia atricapilla*, *Sylvia communis*, *Phylloscopus sibilatrix*, *Sylvia curruca*, *Phylloscopus collybita*, *Regulus ignicapillus*, *Motacilla alba*, *Motacilla cinerea*, *Anthus trivialis*, *Troglodytes troglodytes*, *Lanius collurio*, *Sturnus vulgaris*, *Carduelis chloris*, *Carduelis carduelis*, *Emberiza citronella*, *Miliaria callandra*. The passage species among Passeriformes which enrich the prevernal aspect are: *Turdus iliacus* and *Ficedula hypoleuca*.

The winter visitors which leave the area in prevernal season are: *Bombycilla garrulus* and *Fringilla montifringilla*. Also populations of *Regulus regulus*, *Turdus merula*, *Fringilla coelebs* and *Pyrrhula pyrrhula* appear. Populations of *Alauda arvensis* go to North side (Bistrița Basin).

Vernal season

The vernal season comprises the period between the 1st of May and the 15th of June. In this season birds' effectiveness are quantitatively estimated because the stability of birds' population's is maximum. Birds' population's standing owes to pairs forming and nesting.

For the majority of sedentary species and summer visitors the vernal aspect represents the reproduction period. Until the end of May the first flying hatches can be observed.

There are species like *Muscicapa striata* which arrive only in May, or species which delay their arrival only in some years (like *Phylloscopus sibilatrix*, *Sylvia atricapilla*). *Bombicilla garrulus*, as a winter visitor, was seen leaving the area on the 1st of May 2005.

In vernal aspect the majority of territorial trills can be heard. For some species (*Crex crex* and *Coturnix coturnix*) the trill is very important to detect them because they have protection colours and their comportment is not a social one. Also Passeriformes are easily detected via their trills in this period. We conclude that the migration begins along with the first summer visitors' appearance at the end of February and in the first half of March, the apogee being reached between the 20th of March and the 10th of April. After this period a numerical decrease is registered on the summer visitors' arrival which ends at the half of May.

Estival aspect

In our country the estival aspect is between the 15th of June and the 30th of July. In this season, from the ornitho-faunistic angle, a new reproductive period begins. In estival aspect we observed: the first generation hatches of some species which nested late due to the out of season arrival or species which have a longer enclosing period (woodpeckers; rapacious); second generation hatches of some species which deposited the second punt (Passeriformes majority), the ending of nuptial trill at Passeriformes, a certain birds' tendency of dispersion from the territories where they nested.

In this aspect it is observed a significant increase of the individuals from the brooder bird species.

Autumn passage

The autumn passage comprises the serotinal season (between the 1st of August and the 15th of September) and the autumnal season (the 15th of September and the 31st of October).

In serotinal season the nesting is generally finished. The adult and juvenile birds leave the nesting territories feeding and preparing themselves for the autumn migration. The first birds' summer visitors already leave the Basin of Tazlau River: *Upupa epops*, *Asio otus*, *Coracias garrulus*, and *Lullula arborea*.

The autumnal season is the period of autumn migration. Now the summer visitors' departure and the passage species passing can be observed. There are some species which delay their departure until the beginning of November: *Alauda arvensis*, *Turdus philomelos* and *Fringilla coelebs*.

The sedentary species shift in the perimeters which have a milder perimeter with more abundant food.

In this season the first winter visitors arrive, but in a smaller number.

Table 4. The migration data of some birds' species in autumn passage.

Reg. no.	Species	Migration data	Limits	Average	Obs. years
1.	Tachybaptus ruficollis	12.09.2002; 01.09.2004	01.09.-12.09	06.09	2
2.	Ciconia nigra	10.09.2004			1
3.	Anas crecca	26.11.2001; 30.12.2002; 07.11.2003;	26.11.-30.12	05.12	3
4.	Anas platyrhynchos	23.08.2003			1
5.	Anas querquedula	10.10.2001;			1
6.	Anser albifrons	25.10.2001; 16.10.2004; 07.11.2003;	16.10.-07.11	26.10	3
7.	Aythya fuligula	25.10.2000; 18.10.2002; 22.10.2003; 06.11.2004; 03.12.2005	18.10.-03.12	09.11	5
8.	Falco subbuteo	21.09.2001; 23.09.2003; 18.09.2004	18.09.-23.09	20.09	3
9.	Crex crex	22.09.2000; 20.09.2002	20.09.-22.09	21.09	2
10.	Actitis hypoleucos	26.08.2004			1
11.	Scolopax rusticola	21.10.2001; 23.10.2002; 29.10.2004	21.10.-29.10	24.10	3
12.	Columba palumbus	16.10.2001; 23.10. 2004; 19.10.2005	16.10.-23.10	19.10	3
13.	Columba oenas	29.10.2003; 25.10.2004; 29.10.2005	25.10.-29.10	27.10	3
14.	Streptopelia turtur	29.09.2002; 28.09.2003; 10.10.2004; 27.09.2005	27.09.-10.10	3.10.	4
15.	Cuculus canorus	28.08.2000; 31.08.2002; 03.09.2003;	28.08.-03.09	31.08	4
16.	Caprimulgus europaeus	17.09.2001; 21.09.2003; 24.09.2004; 12.09.2005	12.09.-24.09	18.09	4
17.	Apus apus	15.08.2003			1
18.	Merops apiaster	18.09.2002; 02.10.2003; 20.08.2004; 15.08.2005	15.08.-02.10	08.09	4
19.	Coracias garrulus	23.09.2000			1
20.	Upupa epops	29.08.2000; 10.09.2001; 07.09.2002; 10.09.2003; 23.08.2004; 31.08.2005	23.08.-10.09	01.09	6
21.	Jynx torquilla	08.09.2001			1
22.	Alauda arvensis	05.11.2002; 04.11.2003; 03.11.2004; 04.11.2005	03.11.-05.11	04.11	4
23.	Lullula arborea	28.09.2002; 18.09.2003; 30.08.2005	30.08.-28.09	14.09	3
24.	Hirundo rustica	13.09.2000; 20.09.2001; 16.09.2002 30.09.2003; 29.09.2005	13.09.-29.09	21.09	5
25.	Delichon urbica	10.09.2000; 13.09.2001; 02.10.2002; 16.09.2004; 11.09.2005	10.09.-02.10	20.09	5
26.	Oriolus oriolus	23.08.2000; 10.09.2001; 06.09.2002; 15.09.2003; 01.09.2004; 30.08.2005	23.08.-15.09	04.09	6
27.	Turdus merula	01.10.2001; 06.10.2003; 02.10.2004; 04.10.2005	01.10.-06.10	03.10	5
28.	Turdus philomelos	23.10.2000; 22.10.2001; 20.10.2002 27.10.2003; 01.11.2005	20.10.-01.11	26.10	5
29.	Phoenicurus phoenicurus	20.09.2001; 23.09.2002; 06.10.2003; 15.10.2005	20.09.-15.10	01.10	4
30.	Luscinia luscinia	16.10.2000; 23.09.2001; 08.10.2002; 18.09.2003;	18.09.-16.10	2.10	4
31.	Turdus pilaris	30.09.2001; 18.09.2003; 25.09.2004; 28.09.2005	18.09.-28.09	23.09	4
32.	Sylvia atricapilla	24.09.2000; 22.09.2003	22.09.-24.09	23.09	2
33.	Sylvia curruca	25.09.2001; 28.09.2002; 20.09.2003 27.09.2004	20.09.-28.09	24.09	4
34.	Phylloscopus sibilatrix	31.08.2002; 16.09.2004; 12.09.2005	31.08.-16.09	8.09	3
35.	Phylloscopus collybita	29.10.2002; 31.10.2003; 23.10.2004	23.10.-31.10	27.10	3
36.	Ficedula albicollis	18.09.2001; 23.09.2002	19.09.-23.09	19.09	2

37.	<i>Ficedula parva</i>	16.09.2001			1
38.	<i>Motacilla alba</i>	05.10.2001; 03.10.2002; 01.10.2003	01.10.-05.10	03.10	3
39.	<i>Anthus trivialis</i>	18.10.2002; 10.10.2004; 22.09.2005	22.09.-18.10	05.10	3
40.	<i>Bombycilla garrulus</i>	21.11.2000; 30.11.2002; 13.11.2003 20.11.2004; 25.11.2005	13.11.-30.11	21.11	5
41.	<i>Lanius collurio</i>	28.08.2003; 31.08.2004; 27.08.2005	27.08.-31.08	29.08	3
42.	<i>Lanius excubitor</i>	23.10.2001; 30.10.2002; 22.10.2004	22.10.-30.10	26.10	3
43.	<i>Sturnus vulgaris</i>	16.10.2000; 27.10.2001; 28.10.2002 20.10.2003; 02.10.2004; 19.10.2005	02.10.-28.10	15.10	6
44.	<i>Fringilla montifringilla</i>	06.10.2001; 19.10.2003; 12.10.2005	06.10.-19.10	12.10	3
45.	<i>Carduelis chloris</i>	18.10.2002; 03.10.2003; 21.10.2005	03.10.-21.10	12.10	3

Among the registered migrations we specify: departures of summer visitors or of summer visitors' populations within the partial migratory species, passage species passing on (*Anas crecca*, *Ciconia nigra*), winter visitors arrival (*Fringilla montifringilla*, *Bombycilla garrulus*).

The autumn migration is more discrete, therefore the notes are fewer. The autumn migration begins in the first decade of August when “the hurried” winter visitors leave (*Lullula arborea*, *Oriolus oriolus*, *Cuculus canorus*, *Lanius collurio*). In the next period the number of migrating bird species suddenly increases at the beginning of September, decreases until the end of the month and reaches its climax in the half of October. Some summer visitors leave the studied territory in November's second half.

Hiemal aspect

Although it is the longest season (the 1st of November- The 1st of March), the hiemal aspect is the poorest in species, the forests being uninhabited since birds concentration in tree lines or in the valleys close to human settlements. The birds which remain in the Basin of Tazlau River in the hiemal aspect season are the sedentary species or winter visitors. Also there are passage species which rove through the area in the hienal aspect, and at the end of it (in early springs), the first summer visitors (*Sturnus vulgaris*; *Alauda arvensis*, *Lulla arborea*) appear.

On the subject of the phenological categories' belonging, the 72 species are: 49 are sedentary species (68.06% from the 72 total number of existent species in the hiemal season), 5 passage species (6.94%), 6 species partial-migratory (8.33%), 5 summer visitors species (6.94%), 6 winter visitors species (8.33%): *Turdus pilaris*, *Lanius excubitor*, *Carduelis spinus*, *Bombycilla garrulus*, *Fringilla montifringilla*, *Tachybaptus ruficollis*, one accidental species (1.37%).

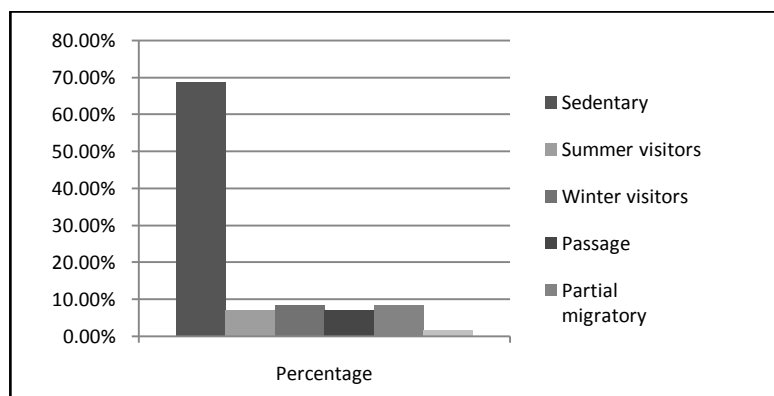


Figure 2. The percentage of phenological categories for the bird species met in the hiemal season.

The table no. 5 presents both birds' species phenological categories in the Basin of Tazlau River and their monthly presence in the studied area.

Table 5. Birds' species phenological categories in the Basin of Tazlau River and their monthly presence in this studied area.

Reg. no..	Species	the Basin of Tazlau River												Bazinul râului Tazlău
		1	2	3	4	5	6	7	8	9	10	11	12	
		N	D	I	F	M	A	M	I	I	A	S	O	
1.	<i>Tachybaptus ruficollis</i>	N	D	I	F	M	A	M	I	I	A	S	O	O. I., P
2	<i>Ciconia ciconia</i>					M	A	M	I	I	A	S		O. V., P
3	<i>Ciconia nigra</i>					M	A					S		P
4	<i>Anas crecca</i>	N	D	I	F	M								P, R.O. I.
5	<i>Anas platyrhynchos</i>			I	F	M				I	A			P, RO. I.
6	<i>Anser albifrons</i>	N				M							O	P
7	<i>Anas querquedula</i>					M	A						O	P
8	<i>Aythya fuligula</i>	N	D	I	F	M	A						O	P
9	<i>Aythya nyroca</i>					M		M					O	Acc
10	<i>Aythya marila</i>				F	M								Acc
11	<i>Buteo buteo</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
12	<i>Accipiter gentilis</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
13	<i>Accipiter nisus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S, O. I.
14	<i>Aquila pomarina</i>						A						O	P
15	<i>Milvus milvus</i>					M								P
16	<i>Aquila chrysaetos</i>	N	D	I	F	M	A	M	I	I	A	S	O	P, M.
17	<i>Falco peregrinus</i>						A	M	I	I	A	S		O. V.
18	<i>Falco subbuteo</i>					M	A	M	I	I	A	S		O. V.
19	<i>Falco tinnunculus</i>						A	M	I	I	A	S	O	O. V.
20	<i>Bonasia bonasia</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
21	<i>Tetrao urogallus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
22	<i>Perdix perdix</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
23	<i>Coturnix coturnix</i>						A	M	I	I	A	S		O. V.
24	<i>Phasianus colchicus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
25	<i>Crex crex</i>					M	A	M	I	I	A	S		O. V.
26	<i>Vanellus vanellus</i>					M	A	M	I	I	A	S	O	O. V., P
27	<i>Actitis hypoleucos</i>						A	M			A	S		O. V.
28	<i>Scolopax rusticola</i>					M	A	M	I	I	A	S	O	O. V., P
29	<i>Columba palumbus</i>					M	A	M	I	I	A	S		O. V., P
30	<i>Columba oenas</i>					M	A	M	I	I	A	S		O. V.
31	<i>Columba livia domestica</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
32	<i>Streptopelia decaocto</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
33	<i>Streptopelia turtur</i>						A	M	I	I	A	S	O	O. V.
34	<i>Cuculus canorus</i>						A	M	I	I	A	S		O. V.
35	<i>Bubo bubo</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
36	<i>Athene noctua</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
37	<i>Strix aluco</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
38	<i>Strix uralensis</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
39	<i>Asio otus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S, P
40	<i>Glaucidium passerinum</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
41	<i>Tyto alba</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
42	<i>Caprimulgus europaeus</i>					M	A	M	I	I	A	S		O. V.
43	<i>Apus apus</i>							M	I	I	A			O. V.
44	<i>Alcedo atthis</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
45	<i>Merops apiaster</i>					M	A	M	I	I	A	S	O	O. V.
46	<i>Coracias garrulus</i>					M	A	M	I	I	A			O. V.
47	<i>Upupa epops</i>					M	A	M	I	I	A	S		O. V.
48	<i>Picus viridis</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
49	<i>Picus canus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
50	<i>Dryocopus martius</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
51	<i>Dendrocopos major</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
52	<i>Dendrocopos minor</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
53	<i>Dendrocopos leucotos</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
54	<i>Dendrocopos syriacus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
55	<i>Picoides tridactylus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
56	<i>Dendrocopos medius</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
57	<i>Jynx torquilla</i>						A	M	I	I	A	S		O. V.
58	<i>Alauda arvensis</i>	N			F	M	A	M	I	I	A	S	O	O. V., P
59	<i>Lullula arborea</i>				F	M	A	M	I	I	A			O. V.

60	<i>Galerida cristata</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
61	<i>Hirundo rustica</i>					M	A	M	I	I	A	S	O	O. V.
62	<i>Delichon urbica</i>						A	M	I	I	A	S	O	O. V.
63	<i>Oriolus oriolus</i>					M	A	M	I	I	A	S		O. V.
64	<i>Corvus corax</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
65	<i>Corvus corone cornix</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
66	<i>Corvus frugilegus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
67	<i>Garrulus glaudarius</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
68	<i>Pica pica</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
69	<i>Corvus monedula</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
70	<i>Parus major</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
71	<i>Parus palustris</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
72	<i>Parus montanus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
73	<i>Parus cristatus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
74	<i>Parus ater</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
75	<i>Parus caeruleus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
76	<i>Aegithalos caudatus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
77	<i>Sitta europaea</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
78	<i>Remiz pendulinus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
79	<i>Turdus merula</i>	N	D	I	F	M	A	M	I	I	A	S	O	P.M.
80	<i>Turdus philomelos</i>	N				M	A	M	I	I	A	S	O	O. V.
81	<i>Turdus iliacus</i>	N				M	A	M	I					P
82	<i>Turdus viscivorus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
83	<i>Turdus pilaris</i>	N	D	I	F							S	O	O. I.
84	<i>Saxicola rubetra</i>						A	M	I	I	A	S	O	O. V.
85	<i>Saxicola torquata</i>						A	M	I	I	A	S	O	O. V.
86	<i>Oenanthe oenanthe</i>					M	A	M	I	I	A	S		O. V.
87	<i>Phoenicurus phoenicurus</i>						A	M	I	I	A	S	O	O. V.
88	<i>Erithacus rubecula</i>	N	D	I		M	A	M	I	I	A	S	O	O. V.
89	<i>Luscinia luscinia</i>					M	A	M	I	I	A	S	O	O. V.
90	<i>Luscinia megarhynchos</i>					M	A	M	I	I	A	S	O	O. V.
91	<i>Sylvia atricapilla</i>						A	M	I	I	A	S		O. V.
92	<i>Sylvia communis</i>						A	M	I	I	A	S		O. V.
93	<i>Sylvia curruca</i>						A	M	I	I	A	S		O. V.
94	<i>Phylloscopus collybita</i>					M	A	M	I	I	A	S	O	O. V.
95	<i>Phylloscopus sibilatrix</i>						A	M	I	I	A	S	O	O. V.
96	<i>Regulus ignicapillus</i>						A	M	I	I	A	S		O. V.
97	<i>Regulus regulus</i>	N	D	I	F	M	A			I	A	S	O	P. M., O.I.
98	<i>Certhia familiaris</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
99	<i>Muscicapa striata</i>							M	I	I	A	S		O. V.
100	<i>Ficedula albicollis</i>						A	M	I	I	A	S		O. V.
101	<i>Ficedula parva</i>											S		Acc.
102	<i>Ficedula hypoleuca</i>						A	M						P
103	<i>Motacilla alba</i>					M	A	M	I	I	A	S	O	O. V.
104	<i>Motacilla cinerea</i>						A	M	I	I	A	S		O. V.
105	<i>Anthus trivialis</i>						A	M	I	I	A	S	O	O. V.
106	<i>Troglodytes troglodytes</i>						A	M	I	I	A	S		O. V.
107	<i>Bombicilla garrulus</i>	N	D	I	F	M	A	M				S	O	O. I.
108	<i>Lanius collurio</i>						A	M	I	I	A	S		O. V.
109	<i>Lanius excubitor</i>	N	D	I	F			M					O	O. I.
110	<i>Sturnus vulgaris</i>				F	M	A	M	I	I	A	S	O	O. V.
111	<i>Passer domesticus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
112	<i>Passer montanus</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
113	<i>Fringilla montifringilla</i>	N	D	I	F	M	A						O	O. I.
114	<i>Fringilla coelebs</i>	N				M	A	M	I	I	A	S	O	P. M.
115	<i>Carduelis chloris</i>					M	A	M	I	I	A	S	O	O. V.
116	<i>Carduelis carduelis</i>	N	D				A	M	I	I	A	S	O	S, O. I.
117	<i>Carduelis spinus</i>	N	D										O	O. I.
118	<i>Loxia curvirostra</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
119	<i>Coccothrauster coccothrauster</i>	N	D	I	F	M	A	M	I	I	A	S	O	S
120	<i>Pyrrhula pyrrhula</i>	N	D	I	F	M	A	M	I	I	A	S	O	P. M.
121	<i>Miliaria calandra</i>					M	A	M	I	I	A	S	O	P. M.
122	<i>Emberiza citrinella</i>					M	A	M	I	I	A	S	O	O. V.

Conclusions

The sedentary species are a part of the Falconiformes, Galliformes, Columbiformes, Strigiformes, Coraciiformes, Piciformes, and Passeriformes orders.

The partial migratory species especially belong to the Passeriformes order (5).

The majority of passage species are Anseriformes (4).

The summer guests are Passeriformes which appear at the end of hiemal aspect: *Alauda arvensis*, *Lullula arborea*, *Turdus philomelos*, and *Sturnus vulgaris*. In *Erithacus rubecula* species case, the populations' majority leave the studied area in October, but some populations' winter near the antropic areas, in the valleys. This aspect may be considered a paradox, but we know that, lately, a global warming was observed both concerning the air and soil's temperature. In the study's period (2000-2005) some winters were mild, but the late freezing expanded until April or until the beginning of May. Some winters begun mild (i.e. the 2004 and 2005 winters) but continued with long term severe cold, the prevernal aspect being practically occupied by the hiemal one and the second half of vernal aspect an events concentration developed within 3 months (March, April and May).

The winter visitors do not delay their arrival for more than 7-8 days (the average) even if there are severe or unfavourable conditions.

The winter visitors leave the studied area considering some aspects about species, local temperatures, precipitations, direction and wind intensity.

The summer visitors' departure from the studied territory is often delayed by local meteorological factors. Thus we observed that the species majority postpone their departure if the sky is totally covered by clouds or if the wind is powerful.

Although the Basin of Tazlau River does not represent a real migration way, it is wandered on some limited sectors (Balcani-Frumoasa, Geamăna-Şoimul) by some passage species.

Due to the absence of lakes, aquatic species the limicoles are less numerous.

Among sedentary species are also included the erratic species which continuously wander in small flocks when the reproducing period ended. They do not either remain in the perimeter of nesting territory, or migrate. i.e.: *Parus ater*, *Certhia familiaris*, *Regulus regulus*, *Loxia curvirostra*. They also shift altitudinally. Thus *Certhia familiaris* move downwards from the altitude where it brooded to the hill valley areas after September. They will come back on March.

The trofic regime represents a determinant factor for birds' shifting; they are forced to assure the energetic substances before making a long journey. The shifts made for obtaining food are made daily or develop on long periods. The food's abundance from some areas determines many species to concentrate here. The erratic and altitudinal shifts are made to find food.

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