# SOME ASPECTS CONCERNING BIRDS' PHENOLOGY IN THE BASIN OF TAZLAU RIVER

### Mihaela MARIS<sup>1</sup> and Mihai ENEA<sup>2</sup>

<sup>1</sup> "Șt. Luchian" School. Zorilor Street, No. 20, Moinești, Bacău, Romania
<sup>2</sup> School No.4, Moinești, Bacău Romania

**Abstract.** The study presents some aspects concerning birds' phenology in the Basin of Tazlau River. The registered birds' in the Basin of Tazlau River fit in more phenological categories: sedentary, partial-migratory, summer visitors, winter visitors, passage species and accidental species considering the provisions method and the resources offered by the studied territory. The study verifies which the brooder species in that area are.

Keywords: phenology, avifauna.

**Rezumat.** Aspecte privind fenologia păsărilor în bazinul râului Tazlău. Păsările inventariate în bazinul râului Tazlău se încadrează în mai multe categorii fenologice: sedentare, parțial-migratoare, oaspeți de vară, oaspeți de iarnă, specii de pasaj și specii accidentale în funcție de modul de hrănire și de resursele pe care le oferă teritoriul studiat. Studiul stabilește care sunt speciile clocitoare în zonă.

Cuvinte cheie: fenologie, avifaună.

#### Introduction

The field observations were made between 2000 and 2005, in the Basin of Tazlau River. Due to these observations we inventoried 122 bird species belonging to 41 families and 15 orders. Considering their dividing into phenological categories, the 122 bird species belong to the following groups: sedentary, partial-migratory, summer visitors, winter visitors, passage species and accidental species.

#### **Materials and Methods**

The observation was the reason to our shifting in the studied habitat in all year's seasons. The first notes were made in the autumnal aspect of 2000.

The sedentary species were easily inventoried due to their presence throughout the year in the Basin of Tazlau River. Their presence was registered by using different methods: the ecosystem type which helped us to observe them and the lack of difficulty when observing certain species. Some Passeriformes are difficult to be observed both as their dimensions are small and due to their camouflage colours.

The species partial-migratory were mostly met within a year, but some populations registered significant numeric changes in cold and warm season.

The summer visitors were observed since the arrival moment (when it was perceived) both in prevernal, serotinal and autumnal seasons, when they leave the Basin of Tazlau River searching genial hibernation places. Important moments from birds' life: territory occupation, pairs forming, eclosing, peepers caring were followed. For observing these moments the direct and discrete observer's presence in the field was necessary, we had to have adequate equipment (i.e. binoculars, thermometer, compass, notebook).

The winter visitors were observed even harder. The shifts in the winter were cumbered by snow-drifts and by the interruption of access ways towards some points in some periods. In the haemal aspect of 2000 the access ways to Berzunți, Geamăna, Şoimul, Măgura Mare, Bolătău, were partially closed.

Also in the aestival season of 2004 and 2005, in Moineşti, Frumoasa, Belci, Cernu areas, due to the floods, the shifts and birds' constant observation were disturbed`. Earth flows, collapses of bridges and decks determined here and there changes of the studied territory's physiognomy and a change concerning avifauna.

Passage Species were registered in spring and autumn. The accidental species have just a few signals in the Basin of Tazlau River.

To identify the nests and to establish the number of brooding pears, the cartographic method was used. .

### **Results and Discussion**

From the total 122 bird species identified in the Basin of Tazlau River, 106 are brooder. The brooding species belong to the following phonological categories: sedentary, partial-migratory, summer visitors and winter visitors. The other 16 species are: passage species, accidentals or winter visitors.

The division on phonological categories is not determined to all bird species in the area because some species display phonological particularities which situate them in a different category than the one of populations' majority. E.g.: there are species which clutch in the Basin of Tazlau River, but there also are exemplars of the same species which are passage birds. That proper species will be registered as brooding species. Other species which usually winter, but which also have passage birds, will be registered in the winter visitors' category.

The 122 species, the group in which they fit in: brooder or non-brooder as well as their phenological category in the Basin of Tazlau River are presented in the table 1.

Reg.	Species	Phenological	Brooder	Non-brooder
no.		category		
1	Tachybaptus ruficollis	W.V., P.		Х
2	Ciconia ciconia	S.V., P.	Х	Х
3	Ciconia nigra	Р.		Х
4	Anas crecca	P., W.V.		Х
5	Anas plathyrhynchos	P., W.V.		Х
6	Anas querquedula	Р.		Х
7	Anser albifrons	Р.		Х
8	Aythya fuligula	Р.		Х
9	Aythya marila	Acc.		Х
10	Aythya nyroca	Acc.		Х
11	Buteo buteo	S.	Х	
12	Accipiter gentilis	S.	Х	
13	Accipiter nisus	S, W.V.	Х	Х
14	Milvus milvus	Р.		Х
15	Aquila pomarina	Р.		Х
16	Aquila chrysaëtos	P.M.	Х	
17	Falco peregrinus	S.V	Х	
18	Falco subbuteo	S.V	Х	
19	Falco tinnunculus	S.V	Х	
20	Bonasia bonasia	S.	х	
21	Tetrao urogallus	S.	х	
22	Perdix perdix	S.	х	
23	Coturnix coturnix	S.V	х	
24	Phasianus colchicus	S.	X	
25	Crex crex	S.V	Х	
26	Vanellus vanellus	S.V., P	Х	Х
27	Actitis hypoleucos	S.V	х	

Table 1	<ol> <li>Phenological</li> </ol>	categories ar	id brood	er or non-	brooder	r groups	for the	bird	species	in t	he
Basin of Tazlau River.											

28	Scolopax rusticola	S.V., P.	Х	Х
29	Columba palumbus	S.V., P.	Х	Х
30	Columba oenas	S.V	Х	
31	Columba livia domestica	S.	х	
32	Streptopelia decaocto	S.	Х	
33	Streptopelia turtur	S V	x	
34	Cuculus caporus	S V	x	
35	Bubo bubo	S	x x	
36	Athene poctus	S.	X X	
27	Striv alugo	5. S	A V	
20	Suix auco	5. 5	X	
20		ა. ი ი	X	
39	Asio otus	5., P.	X	X
40	Glaucidium passerinum	S.	Х	
41	l yto alba	5.	X	
42	Caprimulgus europaeus	S.V.	Х	
43	Apus apus	S.V	Х	
44	Alcedo atthis	S.	Х	
45	Merops apiaster	S.V	Х	
46	Coracias garrulus	S.V.	Х	
47	Upupa epops	S.V.	Х	
48	Picus viridis	S.	Х	
49	Picus canus	S.	Х	
50	Dryocopus martius	S.	Х	
51	Dendrocopos major	S.	Х	
52	Dendrocopos minor	S.	Х	
53	Dendrocopos leucotos	S	x	
54	Dendrocopos svriacus	S	x	
55	Picoides tridactylus	S.	x	
56	Dendrocopos medius	S.	x v	
57	Ivny torquila	S.V	X X	
58	Alauda arvansis	SV P	A v	v
50	Alauda al velisis	S. V., F.	Α	Λ
59	Calarida arborea	<u> </u>	X	
00	Galerida cristata	5. 0.V	X	
61	Hirundo rustica	S.V	X	
62	Delichon urbica	S.V	X	
63	Oriolus oriolus	S.V	Х	
64	Corvus corax	S.	Х	
65	Corvus corone cornix	S.	Х	
66	Corvus frugilegus	S.	Х	
67	Garrulus glandarius	S.	Х	
68	Pica pica	S.	Х	
69	Corvus monedula	S.	Х	
70	Parus major	S.	Х	
71	Parus palustris	S.	Х	
72	Parus montanus	S.	Х	
73	Parus cristatus	S.	Х	
74	Parus ater	S.	х	
75	Parus caeruleus	S.	X	
76	Aegithalos caudatus	S	x	
77	Sitta europaea	S.	x	
78	Remiz pendulinus	S	y	
70	Turdus merula	р. р.м.	A V	x
80	Turdus philomelos	S V	A V	Λ
00	Turdus Pillomeios	ы. v р	А	v
01	Turdus Illacus	<u>г.</u>		Х
82	Turdus viscivorus	S. WW	X	
85	i urdus pilaris	W.V.		Х
84	Saxicola rubetra	S.V	Х	
85	Saxicola torquata	S.V	Х	
86	Oenanthe oenanthe	S.V	Х	
87	Phoenicurus phoenicurus	S.V	Х	

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99	Frithacus rubecula	S V	v	
80	Luccinia luccinia	5.V 5.V	<u>А</u> И	
00		5. V	X	
90		5. V	X	
91	Sylvia atricapilla	S.V	X	
92	Sylvia communis	S.V	Х	
93	Sylvia curruca	S.V	Х	
94	Phylloscopus collybita	S.V	X	
95	Phylloscopus sibilatrix	S.V	Х	
96	Regulus ignicapillus	S.V	Х	
97	Regulus regulus	P. M, W.V.	х	х
98	Certhia familiaris	S.	Х	
99	Muscicapa striata	S.V	Х	
100	Ficedula albicollis	S.V.	Х	
101	Ficedula hypoleuca	Р.		Х
102	Ficedula parva	Acc.		Х
103	Motacilla alba	S.V.	Х	
104	Motacilla cinerea	S.V	Х	
105	Anthus trivialis	S.V	Х	
106	Troglodytes troglodytes	S.V, P.M	Х	Х
107	Bombycilla garrulus	W.V.		Х
108	Lanuis collurio	S.V	Х	
109	Lanuis excubitor	W.V.	Х	Х
110	Sturnus vulgaris	S.V.	х	
111	Passer domesticus	S.	Х	
112	Passer montanus	S.	Х	
113	Fringilla coelebs	P. M.	х	Х
114	Fringilla montifringilla	W.V.		Х
115	Carduelis carduelis	S., W.V.	х	Х
116	Carduelis chloris	S.V.	Х	
117	Carduelis spinus	W.V.	х	Х
118	Loxia curvirostra	S.	х	
119	Coccothrauster coccothrauster	S.	х	
120	Pyrrhula pyrrhula	P. M.	x	
121	Miliaria calandra	S.V	x	
122	Emberiza citrinella	P. M. S.V	x	
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Legend: W.V. =winter visitor; S.V. =summer visitor; P. =passage species; S. =sedentary species; P.M. = partialmigratory species.

### Sedentary Species

The sedentary species are those which can adapt to winter conditions from the Basin of Tazlau River.

There are 49 sedentary species and all of them are brooders. The sedentary species indicate a small number in comparison with the sedentary species existing in Romania, but, beside the 122 total species met in the Basin of Tazlau River, the number is quite large, representing 40.16% from the total species met in the Basin of Tazlau River.

Although they are not sedentary species for the Basin of Tazlau River, *Accipiter nisus* and *Carduelis carduelis* presents even populations of winter visitors. The winter visitors' populations of the species *Carduelis carduelis* prefer the area of riversides, riverside coppices and watercourses.

## Partial – migratory species

This phenological category has species which are sedentary in Romania, but which in the basin of Tazlau River suffer numerical changes in cold and warm season; not being met in each month: *Aquila chrysäetos, Turdus merula, Regulus regulus, Fringilla coelebs, Pyrrhula pyrrhula and Emberiza citrinella.* 

The majority of these species go down the valleys in the winter to find food. Other species are sedentary in some ecosystems and summer visitors or winter visitors in others; these were placed in the category of partial-migratory. The 6 partial migratory species represent 4.92 % from the 122 total species observed in the Basin of Tazlau River.

### Summer visitors' species

The summer visitors come in the studied area in the spring and leave in the autumn either in zones with warm clime or in the favourable areas from trophic angle: hill or plain area. Some migratory species make annually considerable shifts between the S. reproduction and winter quarters.

Within the summer visitors are species which overshoot the Romanian phenological rule of avifauna. Thereby, from the angle of the populations' assembly dynamics, there are sedentary or sedentary-migratory species; but in the Basin of Tazlau River these are summer visitors: *Falco tinnunculus, Alauda arvensis, Sturnus vulgaris, Carduelis chloris*; a phenomenon explained by the area's geo – climactic factors.

The summer visitors sum up 48 species, representing 39.34% from the total of the species met in the Basin of Tazlau River.

Although a small number of species remain in the region for the winter (*Erithacus rubecula, Motacilla cinerea and Miliaria calandra*), they were also included in the summer visitors' category. Other species presents passage populations too: *Ciconia ciconia, Vanellus vanellus, Scolopax russticola, Columba palumbus and Alauda arvensis.* 

#### Species of winter visitors

The winter visitors are bird species which appear only in the cold season in the Basin of Tazlau River: *Tachybaptus ruficollis, Turdus pilaris, Bombycilla garrulus, Lanius excubitor, Carduelis spinus and Fringilla montiringilla. Lanius excubitor and Carduelis spinus* are represented both by brooder populations and by the Nordic migratory ones.

*Bombycilla garrulus* and *Fringilla montiringilla* are winter visitors in the whole country. *Fringilla montifringilla* is frequently met in the winter round localities.

The 6 winter visitors' species represent a percentage of 4.92 % from the Basin of Tazlau' River existent species.

#### **Passage Species**

Passage species pass over the basin in spring or in autumn, alight for food, but do not stop for nesting; they go towards the nestled habitats. The attendance of passage species presents variations or discontinuances which might both be attributed to observer and to the deviation from the ordinary route on different grounds

In the Basin of Tazlau River the following passage species were observed: Ciconia nigra, Anas crecca, Anas platyrhynchos, Anas querquedula, Anser albifrons, Aythya fuligula, Aquila pomarina, Milvus milvus, Turdus iliacus and Ficedula hypoleuca.

The populations of these species totally convey through basin's area. We could also find populations of some summer visitors which are lined in passage birds' category: *Ciconia ciconia, Vanellus, Scolopax rusticola and Alauda arvensis.* 

The passage species do not find proper conditions for brooding or wintering, this being one of the reasons of the unfrozen lakes in winter. Despite these, populations of the *Anas* crecca species were seen wintering in 2001and *Anas platyrhynchos* in 2005. The 10 passage species represent 8.2 % from the total number of 122 registered species in the Basin of Tazlau River.

#### Accidental species

The majority of accidental species appear in the migration periods. They deviate from the ordinary layout, occasionally reaching the studied area. The accidental species are: *Aythya marila, Aythya nyroca* and *Ficedula parva*. From the total number of 3 accidental species met in the Basin of Tazlau River, 2 are aquatic. (*Aythya marila and Aythya nyroca*).

They represent 2.46 % from the total number of basin's birds.

In Tazlaului area some species are passage species: *Tachybaptus ruficollis*, *Ciconia ciconia, Ciconia nigra, Anser albifrons, Anas querquerdul, Aythya fuligula, Aquila pomarina, Vanellus vanellus, Scolopax rusticola, Columba palumbus, Asio otus,* and for Romania there are summer visitors, winter visitors or sedentary. Accidental species in Tazlau are: *Aythya marila, Aythya nyroca, Ficedula parva* which for Romania are considered summer or winter visitors. The species *Anas crecca* and *Turdus pilaris* are winter visitors in the Basin of Tazlau river, but in Romania they are considered to be summer visitors and partial-migratory.

From the angle of a certain phenological category's appurtenance predominant are, in the Basin of Tazlau River, the sedentary species, closely followed by the summer visitors, then the passage species, the species partial-migratory and the winter visitors. The least numerous are the accidental species.

The number of species on phenological categories, their percentage from the total number of the inventoried species in the Basin of Tazlau River, as well as brooders' preponderance is written in the table 2.

Phenological categories	No. of species	% from No. of broode total species		% from the total of brooder species			
Sedentary	49	40,16	49	46,23			
Sedentary-migratory	6	4,92	6	5,66			
Summer visitors	48	39,34	48	45,28			
Winter visitors	6	4,92	2	1,89			
Passage species	10	8,2	-	-			
Accidental species	3	2 46	-	-			

Table 2. Phenological categories and brooder birds in the Basin of Tazlau River.

The number of species belonging to the 6 phenological categories and the number of brooder species can be followed in the figure 1.



Figure 1. Phenological categories and brooder species' predominance in the Basin of Tazlau River.

#### Conclusions

We identified in the Basin of Tazlau River 122 bird species which belong to 15 orders and 41 families. The phenological categories are:

- Sedentary- 49; 40.16% from the total number,
- Partial-migratory- 6; 4.92% from the total number,
- Summer visitors- 48; 39.34% from the total number,
- Winter visitors- 6; 4.92% from the total number,
- Passage-10; 8.2% from the total number,
- Accidentals- 3; 2.46% from the total number.

The sedentary species, the partial-migratory and the summer visitors' species are brooders. Speciile sedentare, parțial-migratoare și oaspeți de vară sunt clocitoare. From the 6 species of winter visitors, 2 of them are brooders: *Carduelis spinus* and *Lanius excubitor*.

On the whole there are 106 brooder species and 16 non-brooder.

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