CONTRIBUTIONS TO THE STUDY OF THE BIRDS FROM RÂNCA RESORT AND ITS SURROUNDINGS (PARÂNG MOUNTAINS – GORJ COUNTY) IN THE AESTIVAL SEASON

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Abstract. The paper presents data on birds in the Rânca area and its surroundings (the Parâng Mountains - Gorj county). The study was conducted in the last five years (2006-2010) during the aestival season. Observations were made in the spruce, subalpine and lower alpine levels, between 1560 m and 2228 m altitude. There were seen 49 species, most of them belonging to the Passeriformes Order. With few exceptions, most of the birds are typically mountain birds corresponding to the spruce forests and mountain gaps. *Dryocopus martius, Hirundo rustica, Delichon urbica, Anthus spinoletta, Motacilla cinerea, M. alba, Nucifraga caryocatactes, Corvus corax, Cinclus cinclus Prunella collaris, Phylloscopus collybita, Regulus regulus, Phoenicurus ochruros, Turdus torquatus,* the species of the *Parus* genus*, Fringilla coelebs Pyrrhula pyrrhula, Loxia curvirostra* are more frequent. In recent years, the beauty of Rânca resort attracted many investors in infrastructure (road, hotels, chalets, ski slopes), which led to the endangerment of habitats and species. Each of the observed species is assigned in at least one of the national and European protection lists. According to the European threat status one species is vulnerable (*Phoenicurus phoenicurus*) and three species are in decline *(Falco tinnunculus, Galerida cristata, Hirundo rustica*).

Keywords: mountain birds, habitat, protection of birds.

Rezumat. Contribuţii la studiul păsărilor din staţiunea Rânca şi împrejurimi (Munţii Parâng - Judeţul Gorj) în aspectul estival. Lucrarea prezintă date privind păsările din zona Rânca şi împrejurimile ei (Munţii Parâng-judeţul Gorj). Studiul s-a realizat în perioada estivală din ultimii 5 ani (2006-2010). Observaţiile s-au realizat în etajul molidului, subalpin şi alpin inferior între 1560 m - 2228 m altitudine. S-au evidenţiat 49 de specii, majoritatea aparţinând Ordinului Passeriformes. Cu mici excepţii, cele mai multe păsări sunt tipic montane corespunzătoare pădurilor de molid şi golurilor montane. Frecvente sunt *Dryocopus martius***,** *Hirundo rustica, Delichon urbica, Anthus spinoletta, Motacilla cinerea, M. alba, Nucifraga caryocatactes, Corvus corax, Cinclus cinclus Prunella collaris, Phylloscopus collybita, Regulus regulus, Phoenicurus ochruros, Turdus torquatus*, speciile genului *Parus, Fringilla coelebs, Pyrrhula pyrrhula, Loxia curvirostra*. Frumuseţea ţinutului montan Rânca a atras în ultimii ani numeroşi investitori pentru infrastructură (drumuri, hoteluri, cabane, pârtii de ski), ceea ce a condus la periclitarea habitatelor şi a speciilor. Fiecare dintre speciile observate este încadrată în cel puţin una din listele de protecţie naţională şi europeană. Conform cu statutul de ameninţare european o specie este vulnerabilă (*Phoenicurus phoenicurus*) şi 3 specii în declin (*Falco tinnunculus, Galerida cristata, Hirundo rustica*).

Cuvinte cheie: păsări montane, habitat, ocrotire.

INTRODUCTION

Rânca resort is located at an altitude of 1580-1600 m, in the southern part of the Parâng Mountains, at the feet of Corneşul Mare Mountain (1686 m). It is located at a distance of 18 km from Novaci, Gorj County (DN 67 C). It is considered an area with a high tourist potential, a growing resort as there have been built many hotels and boarding houses lately (Fig. 1a). It has two ski trails.

It has a mountain climate with variations in altitude (POPESCU, 1986). Up to 1850 m altitude, the July average temperature ranges between 18 and 20^0C and the January average temperature ranges between -4 and -6^0C with heavy snow. The rainfalls exceed 1,000 mm annually. During summer, the rains are torrential. The prevailing winds are from the north-west. The subalpine climate is cold and wet, with annual average temperatures between 2 and -0.5^0C. The annual rainfalls usually exceed 1,200 mm. In the area, there are many cold brooks, with fast flow and rocky bottoms: Rânca, Romanul, Dâlbanul, Păpuşa, Tidvele, Muşetoaia.

The representative vegetation of Rânca resort is represented by the boreal level (Fig. 1b) at 1700 - 1800 m altitude, depending on the nature of terrain and exposure. The habitats corresponding to this area are represented by: shady and dark forests of spruce (*Picea abies*); meadows dominated by *Festuca nigrescens, F. rubra, Nardus stricta, Luzula sylvatica* etc; calcareous rocks; marshy grounds, damp meadows; fast flowing brooks along which species of *Carex*, *Juncus*, *Deschampsia caespitosa* etc. grow; anthropogenic area (Fig. 1a). The subalpine level extends from the upper limit of spruce level to approximately (Fig. 1c) 1900 - 1950 (2000) m altitude. The main habitats found here are: dwarf pine (*Pinus mugo*), juniper (*Juniperus sibirica*), rhododendron (*Rhododendron kotschy*), bilberry (*Vaccinium myrtilus*), cowberry (*Vaccinium vitis-idaea*), etc., grassed-lands, lands with debris and rocks, wetlands, the valleys of brooks. The alpine grasslands (lower alpine) level at above 1950 (2000) m altitude is characterized by rocks and grass meadows. The alpine vegetation is formed of short and cold resistant herbaceous plants such as: *Festuca supina, Carex curvula*, *Agrostis rupestris, Poa alpina, Juncus trifidus, Potentila ternata*, *P. haynaldiana* etc. There are also dwarf shrubs of *Salix reticulata*, *S. herbaceea*. Moss, lichens and saxifraga species grow in the rocky area. (POPESCU et al., 2001).

In the peer-reviewed literature, there are few research studies on birds in Rânca resort (the Parâng Mountains). The most known are the works of POPESCU (1970, 1973, 2000) who studied the birdfauna of the Parâng-Vâlcan Mountains and Petroşani Depression. He highlighted a number of 112 species of birds, of which about half are cited as

being seen in Novaci-Rânca. Some of the collected birds are also in the collection of the Oltenia Museum of Natural Sciences. Recently, ORZAȚĂ (2002) has analysed the birdfauna in terms of vertical distribution. 34 species were identified according to our observations.

This paper presents the situation of the avifauna in Rânca resort and surroundings, discussing about phenology, habitat, endangerment and protection status, anthropogenic actions and the changes on birds in the studied area, factors that threaten the stability of birds and the protection measures.

MATERIAL AND METHODS

The birds have been observed during aestival season the field trip with the students from the Department of Biology conducted at the research station of the University of Craiova - "Marin Păun" Mountain Botanic Garden (1560 m altitude). In the paper there are listed the observations from the last five years: 1-7 July 2006, 8-14 July 2007, 5-12 July 2008, 3-8 July 2009, 28 June-4 July 2010. For the monitoring of the birds there were used traditional methods, including the fieldwork.

The departures were performed both in the morning from 9 a.m. to 14.30 p.m. on pre-established routes, corresponding to the levels of vegetation and in the afternoon between 18 - 20 p.m. especially around the research station and its surroundings. As observation points we can mention Rânca (1560 m), "Coada Râncii" (1655 m), the winding road which passes at the feet of Păpuşa Mountain (1700-1850 m), "Coasta Crucii" (2020 m), "Cracul Săliştenilor", Dâlbanul (1623 m, 2000 m), Paltinul (1900 m), Dengherul (2069 m), "Şaua Dengherul" (2035 m), "Pasul Urdele" (2145 m), Urdele (2228 m), Păpuşa (1870 m, 2136 m), Cioara (2090 m, 2123 m), "Căldarea Tidvele", Tidvele (1800 m, 1950 m), "Şaua Tidvele" (2070 m), the brooks: Rânca, Romanul, Dâlbanul, Păpuşa, Tidvele, Muşetoaia.

For the observation, identification and analysis of birds there were used: Norconia 10x50 binocular, camera (Panasonic SDR-H20), FujiFilm FineFix A900 camera, BRUUN et al. (1990) field guides, and works from the peer-reviewed literature: BÉREŞ (1999, 2000), KOHL (1983), RADU (1967, 1984), MUNTEANU (1964, 1976, 1995), MUNTEANU & SZABÓ (2001), TĂLPEANU (1969) etc. There have been taken many pictures and there were filmed a few snapshots from the life of birds.

RESULTS AND DISCUSSIONS

In recent years, the habitat of Rânca resort has undergone changes due to the building of numerous hotels and boarding-houses, and the construction of new roads. This has led to deforestation of the area, the conifers woodcutting and subsequently to changes in the components of the avifauna.

The 49 species (Table 1) observed in the mentioned periods belong in terms of taxonomic order to 5 Orders - Accipitriformes, Falconiformes, Apodiformes, Piciformes, Passeriformes and 16 families. The Passeriformes Order is the best represented with 41 species observed so far.

According to the table the avifauna of the area is a typical fauna of mountain areas, specific to alpine and subalpine areas and to spruce forests. At some species there were listed (roughly) also the maximum altitudes at which they were observed. From the species specific to the spruces we mention the following: *Dryocopus martius, Picoides tridactylus, Nucifraga caryocatactes* (Fig. 2a), *Parus montanus, P. cristatus, P. ater, Regulus* sp., *Carduelis spinus, Pyrrhula pyrrhula, Loxia curvirostra*. There are common also the eurytopic species as: *Garrulus glandarius, Troglodytes troglodytes, Erithacus rubecula, Fringilla coelebs,* and raptors. The constructions, the housings (chalets, villas, forest ranges) have attracted in the area many anthropogenic birds: *Apus apus, Hirundo rustica*, *Delichon urbica*, *Phoenicurus ochruros, Turdus merula*, *Parus major*.

The ecotone area between the subalpine level and the level of spruce, grasslands, glades, rocky areas, debris, river valleys, bushes etc. are more densely populated with birds than the inner part of the forest: *Anthus trivialis*, *Sylvia atricapilla, S. curruca, Phylloscopus trochilus, P. collybita, Carduelis carduelis, Phoenicurus phoenicurus* etc. I noticed some species specific for the alpine and subalpine level (Fig. 1d): Alpine Accentor (*Prunella collaris*), Water/Rock pipit (*Anthus spinoletta*) – the prevailing species (Fig. 2b), Northern Wheatear (*Oenanthe oenanthe*) etc. But birds, mobile vertebrates are not strictly related to the levels of vegetation. In search of food and shelter, birds are found in the mentioned levels: *Corvus corax, Phoenicurus ochruros, Turdus torquatus* (Fig. 2c), *Oenanthe oenanthe, Falco tinnunculus, Buteo buteo* etc.

Along the brooks from the spruce and subalpine level there occur some species as *Motacilla alba, M. cinerea, Cinclus cinclus* etc. The Crested Lark (*Galerida cristata*), species typical of the plain was observed along Transalpina winding road from Coada Râncii Saddleback (1655 meters) up to the feet of the Păpuşa Mountain at 1800 m. In the peer-reviewed literature it is cited by MUNTEANU (1963) as being present in Bistriţa Mountain but without specifying the altitude. RADU (1967) states that it comes to nestle in the Southern Carpathians, in the coniferous forests mixed with beech (600-1300 m altitude). We believe that the presence of the species at high altitudes is due to its capacity of adaptation at the mountain conditions. Regarding the following species observed and collected from Rânca by POPESCU (2000) we have to verify their presence in the coming years: *Tringa hypoleucos* (year 1967), *Strix aluco* (year 1968), *Eremophila alpestris balcanica* (year 1969 at Urdele). Regarding the Horned Lark Balcanica, recent information has been supplied by MUNTEANU & SZABÓ (2001), whose research confirms the existence of a micropopulation of this

species in Urdele area. In the fieldwork, the local silviculturists have communicated the absence of the Western Capercaillie, which was present twenty years ago, in the spruce forests of Rânca area. The growing anthropogenic pressure, massive deforestation with the aim of extending the tourist area of Rânca, have had a negative impact on the populations of Capercaillie, which have moved towards secluded and quiet places of other areas of the Southern Carpathians.

Concerning the breeding we have reliable data on several species: *Delichon urbica, Hirundo rustica* (nests with fledglings at the eaves of buildings), *Phoenicurus ochruros* (nests with fledglings in abandoned sheep-folds – in the cracked walls, at the eaves of Rânca scientific chalet); *Falco tinnunculus* (nest in the rock cracks at Tidvele, approx. 2000 m altitude); *Corvus corax* (nest in spruce between forked branches); *Cinclus cinclus* (nest in the bank of the Muşetoaia brook); *Fringilla coelebs, Pyrrhula pyrrhula, Oenanthe oenanthe, Parus ater, Nucifraga caryocatactes* (injured juveniles found on the ground); *Motacilla alba, M. cinerea, Loxia curvirostra, Turdus torquatus, Anthus spinoletta, Parus* sp. (juveniles, constant presence).

We did not consider opportune to make a comparison of our study with other similar studies, because of the fact that the observations are limited only to the aestival season.

Rânca resort has been recently affected by deforestation, overgrazing in more accessible areas, construction works, new roads, torrential phenomena and soil erosion, landslides, floods, pollution by abandoned wastes, garbage and many more. Thus, the birds of the studied area are subject to both anthropogenic pressure (Table 2) and climatic factors.

Table 2. The consequences of anthropogenic activities on birds from Rânca and possible measures to improve the negative effects.
Tabel 2. Consecinţele activităţilor antropice asupra păsărilor din Rânca şi posibilele măsuri de ameliorare a efectelor negative.

Anthropogenic threats	The acting way of threatening factors	Threatened Species	Possible counteraction measures
Deforestation Conifers woodcutting	- loss of natural habitats (compact spruce forests, scrubs, wet grasslands); - loss of nestle sites; - food-source reduction by eliminating the xylophagous insects, and the seeds of conifers.	- all the birds that nest on the branches of conifers or in hollows; - insectivore species, with mixed regime: *Loxia curvirostra, Pyrrhula pyrrhula* etc.	- replanting conifers that provide vital feeding and reproduction needs for all birds categories; - maintenance of logs as a source of protection.
Irrational grazing	- destruction of nests by sheep flocks and accompanying dogs.	- species of birds nesting on the ground.	- grazing after the end of the nesting period.
Infrastructure. roads, buildings, ski trails	- destruction of nestle sites; - disturbance of birds breeding.	- most species.	- to reduce the disturbance.
Random storage of building materials and wastes	- injuring some birds due to wires, nails, bricks, wood; - pollution of habitats.	- all species.	- arrangement of facilities for the storage of construction materials and wastes; - discharging regularly the trash bins.
Leisure activities (hiking, climbing)	- disturbing the birds activity.	- all species.	- installation and maintenance of informative panels and warning plats; - marking the tourist routes; - location of tents (camping) in special designated areas; - ban waste abandonment; - imposing fines when destructing the nests and collecting the eggs.

Despite the anthropogenic pressure, which is growing, one can observe a change in the dynamics and frequency of bird species in Rânca resort. It is encouraging that some species typical for Subcarpathian areas, hill and plain areas extend also into this mountain area such as *Galerida cristata, Parus caeruleus, Turdus philomelos, T. merula* etc. Therefore, for a harmonious cohabitation with the birds there should be taken into account two important aspects: one related to tourism and infrastructure and one related to the protection of vegetation and fauna (implicitly of birds). In recent years, the increasing interest in Rânca led to numerous infrastructure projects. But there should be promoted only those projects of urban development that keep the species intact. There should be created a civilized tourism in order to limit its negative impact on the habitats of fauna and flora in this area.

The identified species are listed on various international and national protection lists as having a certain status of endangerment (Law 13/1993, Birds Directive 2009/147/EC, Government Emergency Ordinance 57/2007, Hunting Law 407/2006, Law 197/2007, Law 49/2011) – Table 1.

According to the European threat status (TUCKER, 1994), three species are declining *Falco tinnunculus, Galerida cristata, Hirundo rustica*, and one species is vulnerable: *Phoenicurus phoenicurus*. In our country the situation of these species is a favourable one. Although most species are safe, there is a risk to become vulnerable or endangered in any moment. Among the observed species only *Corvus corax* is listed in Romanian Red Book of Vertebrates, having

an endangered status, being declared a Monument of Nature (MUNTEANU, 2005). The current protection measures had led to the recovering of the raven flocks, which were reduced in the interwar period. Thus the raven is a common bird in the studied area.

CONCLUSIONS

Rânca resort, once wild, underwent important transformations in recent years (DN 67 C Transalpina road modernization, constructions of hotels, villas, boarding-houses, deforestation, etc.) that have led to changes in the biotopes and birds life implicitly. The avifauna of the area was identified during the aestival season from 1560 m altitude to about 2228 m altitude. It is a mountain avifauna, specific to the spruce, subalpine and lower alpine areas. The observed birds have a favourable conservation status, being protected by the Romanian laws. Due to the increasing anthropogenic pressure in the area, there should be created a managerial project for maintaining a balance between the socio-economic and tourist development activities of the resort with the interests in the biodiversity conservation, implicitly of birds.

This study is preliminary. The monitoring of birds should be continued in other periods of the year, in order to obtain a more complete knowledge of the avifauna spectrum and of the biology of bird species.

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a. b. c. d.

Figure 1. Image of Rânca: a. anthropogenic biotope; b. boreal level - ”Marin Păun” Mountain Botanic Garden; c. biotope with dwarf pine and the debris; d. subalpine and alpine grasslands levels - Vf. Păpuşa (Original photo).
Figura 1. Imagini Rânca: a. habitat antropic; b. etaj boreal - Grădina Botanică Montană „Marin Păun”; c. habitat cu jnepeniş şi grohotiş; d. etaj subalpin şi alpin - Vf. Păpuşa (Fotografii originale).

Table 1. The avifauna in the aestival season in Rânca resort. The phenology, habitat, threat and protection status of the identified species of birds.
Tabel 1. Componența avifaunei din zona montană Rânca în aspectul estival. Fenologia, habitatul, statutul de amenințare și protejare a speciilor de păsări identificate.

No.	Species	Romania Phenology	Habitat; Observations	Threat status	Protection status			
				Europe	B. D.	Law 13 / 1993	H. L. 407 / 2006	G.E.O. 57 / 2007
1.	*Accipiter gentilis*	R	spruce forests, valleys of mountain brooks, ecotone, subalpine grasslands; 1850 m			A II	A 2	
2.	*Buteo buteo*	PM	spruce forests, above the mountain rivers, alpine and subalpine openings for food; up to 2000 m altitude			A II	A2	
3.	*Falco tinnunculus*	PM	coniferous forests, rocky areas, alpine and subalpine openings, the water valleys; approximately 2100 m	D		A II	A 2	A 4B
4.	*Apus apus*	SV	constructions area, on Păpusa rocks; at 1950 m			A III	A 2	
5.	*Dryocopus martius*	R	spruce forests, tree-line (spruce level)		A 1	AII	A 2	A3
6.	*Dendrocopos major*	R	spruce forests, near buildings, tree-line				A 2	
7.	*Dendrocopos leucotus*	R	spruce forest around the research stations; rare; one observation; 1560 m		A 1	A II		A 3
8.	*Picoides tridactylus*	R	compact spruce forests, dry spruce glades; rare		A 1	A II	A 2	A 3
9.	*Galerida cristata*	R	constructions area, the edge of paths and road-sides, along Transalpina road up to approx. 1800 m					
10.	*Hirundo rustica*	SV	eurytopic, at hotels, villas, boarding-houses, chalets; up to approx. 1750 m; common	D		A II	A 2	
11.	*Delichon urbica*	SV	eurytopic, at hotels, villas, boarding-houses, chalets; common; up to approx. 1750 m			A II	A 2	
12.	*Anthus trivialis*	SV	coniferous tree-lines, glades, areas of shrubs (spruce level); 1680 m			A II	A 2	
13.	*Anthus spinoletta*	SV	subalpine and alpine grasslands, on rocks along the paths, screes, blocks, ecotone; up to approx. 2228 m at Urdele; common			A II	A 2	
14.	*Motacilla cinerea*	SV	roadsides, paths with gravel, sand, logs, spruce forest, tree-line, anthropogenic habitat, ecotone, along brooks (spruce and subalpine level); approx. 1850 m; common			A II	A 2	A 4B
15.	*Motacilla alba*	SV	roadsides, paths with gravel, sand, logs, spruce forest, tree-line, anthropogenic habitat, ecotone, along becks (spruce and subalpine level); approx. 1850 m; common			A II	A 2	A 4B
16.	*Garrulus glandarius*	R	coniferous forests, tree-lines, near chalets				A 1	A 5C
17.	*Nucifraga caryocatactes*	R	spruce forest, ecotone, subalpine bushes, frequent; approx. 1850 m			A II	A2	A 4B
18.	*Corvus corax*	R	spruce forests, subalpine and alpine zone; common species; 2200 m	E			A 2	A 4B
19.	*Cinclus cinclus*	R	along the brooks Mușetoaia (1650 m), Tidvele (1800 m) from the spruce and subalpine level			A II	A 2	A 4B
20.	*Troglodytes troglodytes*	SV, RWV	spruce forest tree-line, bushes along the creeks; ecotone, cade and juniper bushes; 1800 m			A II	A 2	
21.	*Prunella collaris*	R	alpine grasslands, subalpine meadows, rocks, debris; reaching up to approx. 2228 m at Urdele; frequent			A II	A2	A 4B
22.	*Prunella modularis*	SV, RWV	spruce forests, tree-line, ecotone, juniper bushes	S		A II	A 2	A 4B
23.	*Sylvia curruca*	SV	spruce forest near chalets, creeks, bushes, ecotone, juniper thickets			A II	A 2	
24.	*Sylvia atricapilla*	SV	coniferous forests near chalets, creeks, bushes, ecotone	S		A II	A2	
25.	*Phylloscopus trochilus*	P, SV	coniferous forests, tree-line, glades, bushes, ecotone; 1900 m			A II	A 2	A 4B
26.	*Phylloscopus collybita*	SV	coniferous forest, young plantations, bushes, ecotone, juniper areas; 1900 m			A II	A 2	A 4B
27.	*Phylloscopus sibilatrix*	SV	coniferous forests	(S)		A II	A 2	A 4B
28.	*Regulus regulus*	PM	spruce forests, thickets along streams; ecotone	(S)		A II	A 2	A 4B
29.	*Regulus ignicapillus*	PM, WV	spruce forests, thickets along streams; ecotone	S		A II	A 2	A 4B
30.	*Erithacus rubecula*	SV, RWV	spruce forests, tree-line, forest paths, bushes			A II	A 2	A 4B
31.	*Phoenicurus phoenicurus*	SV	spruce forest tree-line, glades, bush at the entrance to Rânca	V		A II	A 2	A 4B
32.	*Phoenicurus ochruros*	SV	eurytopic; spruce forest tree-line, around the chalets, sheepfolds, rocky areas; common; 2100 m			A II	A 2	A 4B
33.	*Oenanthe oenanthe*	SV	spruce forests tree-line, subalpine grasslands, fields with screes, rocks; Paltinul, Dâlbanul, Tidvele mountain slopes; 1950 m			A II	A 2	
34.	*Turdus torquatus*	SV	spruce forests near the chalets, shrubs, ecotone, juniper areas, along the streams; frequent; 1950 m	S		A II	A 2	
35.	*Turdus merula*	PM	coniferous forest; 1700 m	S			A 2	
36.	*Turdus philomelos*	SV	coniferous forests, tree-line, shrubs; 1650 m	S			A 1	A 5C
37.	*Turdus viscivorus*	PM	coniferous forests, tree-lines, ecotone; frequent; 1800 m	S		A III	A 1	A 5C
38.	*Parus montanus*	R	coniferous forest, ecotone, shrubs near creeks; frequent			A II	A2	

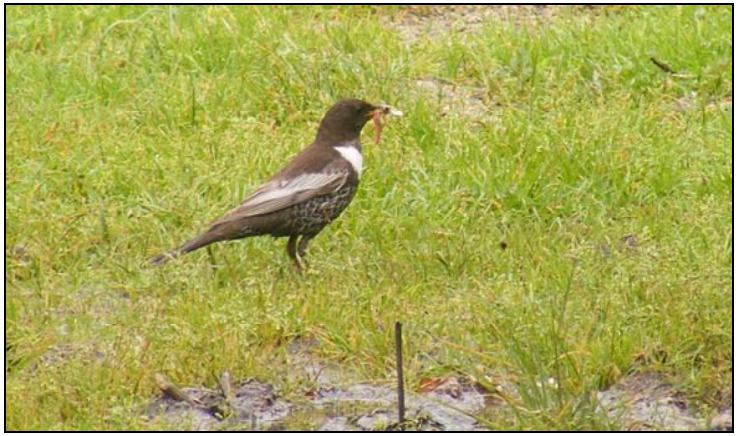
39.	*Parus ater*	R	coniferous forest, ecotone, glades, meadows, open wood; frequent; at 1900 m			A II	A 2	
40.	*Parus caeruleus*	R	spruce forests, glades, bushes along creeks, frequent	S		A II	A 2	
41.	*Parus major*	R	coniferous forests, shrubs along creeks, near buildings; common			A II	A 2	
42.	*Parus cristatus*	R	spruce forests, glades, deforested areas, ecotone; frequent; 1850 m	S		A II	A 2	
43.	*Sitta europaea*	R	spruce forests at the entrance to Rânca			A II	A2	A 4B
44.	*Fringilla coelebs*	PM	eurytopic; spruce forests, tree-lines, glades; common	S		A II		
45.	*Pyrrhula pyrrhula*	R	spruce forests, glades, meadows; frequent			A II	A 2	
46.	*Carduelis spinus*	PM, WV	spruce forests, along the creeks, ecotone; 1750 m	S		A II	A2	A 4B
47.	*Carduelis chloris*	R	spruce forest tree-line, glades; 1700 m			A II	A 2	A 4B
48.	*Carduelis carduelis*	R, WV	spruce forest tree-line, glades; 1700 m			A II	A 2	A 4B
49.	*Loxia curvirostra*	R	spruce forests, tree-lines, glades, thickets along streams, ecotone; frequent; 1850 m			A II	A 2	

Legend:
Phenological status: S – sedentary, R – resident, PM – partial migrant, SV – summer visitors, WV – winter visitors, RWV – rare winter visitors.
Threat status: E – endangered, V – vulnerable D – declining, S – secure, () - provisionally.
Protection status: B.D. = Birds Directive – Annex 1: species to whom there are imposed habitat conservation measures to ensure the survival and reproduction in the area of distribution. Law 13 / 1993 - Annex II: strictly protected fauna species; Annex III: protected fauna species. H.L. = Hunting Law 407 / 2006 Annex 1: the wild fauna of hunting interest whose hunting is allowed; Annex 2: the wild fauna of hunting interest whose hunting is prohibited; G.E.O. = Government Emergency Ordinance 57 / 2007 – Annex 3: species whose conservation requires the designation of special areas of conservation and special protection areas of the avifauna; Annex 4 B: species of national interest, species requiring a strict protection; Annex 5 C: species of Community interest whose hunting is allowed.

Legendă:
Statut fenologic: R – sedentar; PM – migrator parțial, SV – oaspeți de vară; WV – oaspeți de iarnă; RWV – rar oaspeți de iarnă.
Statut de amenințare: E – periclitat, V – vulnerabil, D – în declin, S – în siguranță, () – provizoriu.
Statut de protecție: B.D. = Directiva Păsări – Anexa 1: specii pentru care se impun măsuri de conservare a habitatelor pentru a se asigura supraviețuirea și reproducerea în aria de distribuție. Legea 13 / 1993 – Anexa II: specii de faună strict protejate; Anexa III: specii de faună protejată. H.L. = Legea vânătorii 407 / 2006, Anexa 1: fauna sălbatică de interes vânătoresc la care vânarea este permisă; Anexa 2: fauna sălbatică de interes vânătoresc la care vânarea este interzisă. G.E.O. = Ordonanța Guvernamentală de Urgență 57 / 2007 – Anexa 3: specii de animale a căror conservare necesită desemnarea ariilor speciale de conservare și a ariilor de protecție specială avifaunistică; Anexa 4 B: specii de interes național, specii de animale care necesită o protecție strictă; Anexa 5 C: specii de interes comunitar a căror vânare este permisă.

a. *Nucifraga caryocatactes*

b. *Anthus spinoletta*



c. *Turdus torquatus*

Figure 2. Some species of birds from Rânca (Original photo).
Figura 2. Câteva specii de păsări de la Rânca. (Fotografii originale).

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