

BIRDS FROM PEOPLE'S PARK AND FROM PARK OF ROSES DURING WINTER

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Abstract: We chose for research two parks, northern side by 3 August Street, in the southern side by Pestalozzi Street and in the eastern side by Vasile Parvan Avenue. Park's area is 25 170 m². From observations, there are present 20 species of birds, with few exceptions, typical to seasons. The degrees of dominance vary from one park to another, depending on the vegetation, especially the wood vegetation in the park, the joining of transportation arteries etc. The most adapted are found to be 4 species (*Streptopelia decaocto* - ring doves, *Turdus merula* - blackbird, *Corvus frugilegus* - rook, *Columba livia domestica* - pigeon. More than one quarter are anthropophile species (*Passer montanus* - Tree Sparrow, *P. domesticus* - House Sparrow, *Corvus frugilegus* - Rook, *C. monedula* - jackdaw, *Streptopelia decaocto* - ring doves and *Pica pica* - magpie). They are mentioned in different literature as well adapted species to the tumultuous life of the city and very when environmental conditions change. The work is original and the results obtained are important for diversity conservation of bird species in urban environment.

Abstract: We chose for research two parks, People's Park and Park of Roses, as they are located in the center of Timisoara, in an area with a heavily anthropic character, they have in the vicinity very circulated arteries, including tram lines and thus can be regarded as a barometer of the adaptability of birds to urban environment. The purpose of the paper is to present the best adapted species to urban environment of Timisoara. Status of research in the field of bird species diversity in urban areas is currently produced on an international level and on national level is in an early stage. The investigation method applied is based on the routes method (Ferry and Forchot, 1958), improved by Prof. Univ. Ph.D. Biol. Dan STĂNESCU, by including in the calculation of threshold values of the dominant three indices, besides assessing the participation percentage, kilometric abundance index (IKA), biomass, metabolic index. Park of Roses is located in the northern side of Bega river, it is bordered by Rose Street, Michelangelo Avenue and the tennis land of the sport base. The area is 35 790 m². People's Park, the oldest park in the city, is bordered in the

Key words: birds, park, dominance, urban environment, Timișoara

INTRODUCTION

Early days of the parks of Timișoara are marked by the project of the city, the author being Professor Architect Laszlo Szestay (1910), which provided a belt of green spaces along the Bega channel. This has been split again in Scudier Park, Central Park, Justice Park and Cathedral Park in the northern side of Beghei river, in Children's Park (1913), Park of Roses (1940) and a green strip in the southern side of Beghei river, which then divided into the Gallery Park (1930), University Park (1960) and Vasile Parvan Park (1980). Then arise some city parks that are not affiliated to Bega channel, such as People Park (Queen Mary), Eminescu Park, Carmen Sylva Park, Demetrovici Park, Botanic Park, Lidia Park (forest after 1997), Mocioni Park, Stadium Park. In addition Timisoara currently holds a number of squares and other green spaces more or less with wood vegetation, but indispensable to house birds.

MATERIAL AND METHODS

The investigation method applied is based on the routes method (FERRY and FORCHOT, 1958), improved by Prof. Univ. Ph.D. Biol. DAN STĂNESCU, by including in the

calculation of threshold values of the dominant three indices, besides assessing the participation percentage. These indices are: kilometric abundance index (IKA), biomass, metabolic index, called consumption by KORODY (1958), reconsidered by STĂNESCU et al. (1999) as a metabolic index, which is actually the flies or body surface area calculated by the energy loss by Turcek in the tables that bear his name. According to him, STĂNESCU et al. (1999) speaks of the involvement of the user or consumer species in the ecosystem.

Dominance thresholds values are considered as follows:

→ absolute dominance threshold is given by all values placed above the average values plus standard deviation,

→ dominance threshold of all values that are above the average values

→ subdominance threshold of all values above the average value minus standard deviation

→ auxiliary threshold of all values less than the average values and standard deviation

→ quality of accident (accident) of all values under 20% of the auxiliary value (Stănescu et al. 1999).

Margin of error is calculated by 0.05%.

All calculation is made by using a soft, made in the informatics laboratory of Zoology Department belonging to Biology-Geography Faculty (West University of Timișora).

RESULTS AND DISCUSSIONS

Birds were seen with binoculars, noted immediately (species and numbers of individuals by which this one is currently represented in the habitat). In comments of the parks studied, there are present 20 species of birds, with few exceptions, according to the typical season. Different degrees of dominance, the nature of absolute dominance joining the 4 species (*Streptopelia decaocto*, *Columba livia domesticus*, *Turdus merula* and *Corvus frugilegus*), followed by dominant species in number of 4, subdominante - 10, 1 auxiliary and 1 accidental, according to Table 1.

We notice that among the absolutely dominant species and dominant species are accommodated urban birds, antropophile species which profit from human activity directly or indirectly. Dominance of blackbirds (*Turdus merula*) and crow-of-sown (*Corvus frugilegus*) is given by high values of the parameters taken into account. In both cases the presence of both species is given because of the favorable conditions offered by the environment, but that are totally different in terms of application of species.

Crows, omnivorous species, exploit all trophic debris discarded by humans, trash baskets and blankets in the dead leaves where are trophic factors, they hide nuts collected from neighboring yards.

Streptopelia decaocto (pigeon) is a presence in any city, species that has become commonplace in our country following the boom suffered almost three centuries ago by the populations from the south of the Black Sea. Granivor, but depending on the situation also fruit consumer, the pigeon species inhabit all habitats becoming sedentary and very common in parks. His dominance is characterized by the representative biomass.

Among rare species, ancillary or accidental falls *Regulus ignicapilus* - Firecrest, one of the smallest existing birds, species typical for mountain, in winter descends to lowland populating the forests in here and *Phylloscopus collybita* - wren, which appears in the park towards the spring. The penetration into the city is going through the erratism of *Regulus sp.* required by polispecific flocks in which he integrates and explores winter stand in search of food (insectivor species).

Fauna and degrees of dominance

Nr	Species	I _n IKA	I _n %	I _n Bio	I _n Imet	Dominance
1	<i>Turdus merula</i>	3..39	3.12	9.86	8.15	AD
2	<i>Corvus frugilegus</i>	3.15	2.10	10.45	8.38	AD
3	<i>Streptopelia decaocto</i>	2.77	1.83	9.10	7.35	AD
4	<i>Columba livia domesticus</i>	2..30	2.42	8.59	6.73	AD
5	<i>Sturnus vulgaris</i>	2..31	1.06	8.48	6.32	DOM
6	<i>Passer montanus</i>	3..36	1.98	7.66	6.59	DOM
7	<i>Passer domesticus</i>	3.12	1.75	7.61	6.47	DOM
8	<i>Parus major</i>	1.79	2.85	6.76	5.80	DOM
9	<i>Corvus monedula</i>	1.86	1.35	8.29	6.51	SD
10	<i>Coccythraustes coccythraustes</i>	1..25	1.73	8.16	6.09	SD
11	<i>Dendrocopos syriacus</i>	1.47	1.66	7.98	5.93	SD
12	<i>Carduelis carduelis</i>	1.83	1.40	7.50	5.84	SD
13	<i>Parus caeruleus</i>	1.71	1.67	5.46	4.60	SD
14	<i>Carduelis chloris</i>	0..91	1.10	6.04	4..93	SD
15	<i>Pica pica</i>	0.71	0.88	7.39	5..39	SD
16	<i>Dendrocopos major</i>	0.53	0.88	5..99	4..53	SD
17	<i>Sitta europaea</i>	0.71	1.06	4..97	3..91	SD
18	<i>Accipiter nissus</i>	0.45	0.10	3.67	2.41	SD
19	<i>Phylloscopus collybita</i>	0.39	0.04	2.77	2.08	AUX
20	<i>Regulus ignicapillus</i>	1.08	0.73	1.79	1.41	ACC

From the 20 birds identified in this time of year, 11 (57.89%) are protected (Figure 1) in all countries of the European continent: *Carduelis chloris* - Greenfinch, *Parus caeruleus* - Blue Tit, *Parus major* - Great Tit, *Streptopelia decaocto* - pigeon, *Dendrocopos syriacus* - Garden woodpecker, *Dendrocopos major* - Great Spotted Woodpecker, *Sitta europaea* - Nuthatch, *Phylloscopus collybita* - Wren, *Regulus ignicapillus*.

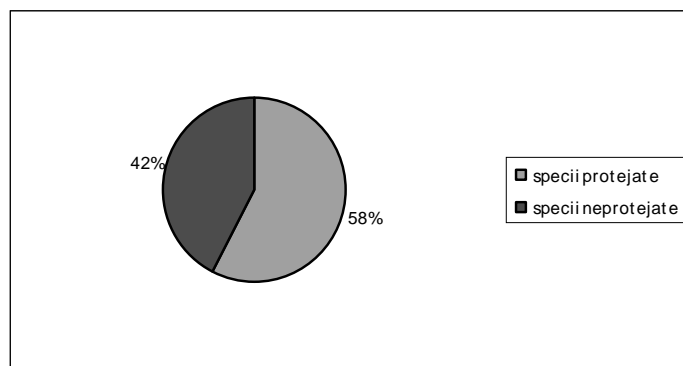


Figure 1: The ratio between protected and unprotected species in parks

Avifauna in the Park of Roses

Park of Roses fauna - 15 species are present for the period 26.10.2008 - 30.03.2009 (table 2).

Starling (*Sturnus vulgaris*) and Wren (*Phylloscopus collybita*), migratory species, they join the sedentary and existent species all winter, but only in the end and its beginning. They were also joined by greenfinch (*Charduelis chloris*) but only in harsh winters.

Blackbird (*Turdus merula*) and milvus (*Parus major*) are in large numbers because the factor silence is relatively provided by the presence of “bushes”, the coppice, as it happens in the Park of Roses. Ornamental coniferous, *Taxus baccata*, *Thuja sp.* clipped pyramid and base pine branches in this form they operate as a shelter during winter and summer, and in spring this is the preferred place for several species to build their nest.

Field sparrow (*Passer montanus*) and the house sparrow (*Passer domesticus*) are quartered all along the main arteries.

Table 2

Fauna and degrees of dominance - Park of Roses

Nr	Species	I _n KA	I _n %	I _n Bio	I _n Imet	Dominance
1	<i>Streptopelia decaocto</i>	13.04	24.19	4940	85.93	AD
2	<i>Stumus vulgaris</i>	14.62	32.51	2000	70.03	AD
3	<i>Turdus merula</i>	12.54	30.65	2500	53.85	AD
4	<i>Corvus frugillegus</i>	6.02	11.29	6000	75.60	AD
5	<i>Corvus monedula</i>	7.52	9.68	3150	52.99	DOM
6	<i>Columba livia domesticus</i>	2.50	4.84	1350	20.90	DOM
7	<i>Cocothraustes cocothraustes</i>	1.04	3.23	1100	28.92	SD
8	<i>Pica pica</i>	0.50	1.61	270	36.44	SD
9	<i>Parus caeruleus</i>	6.45	2.50	65	27.65	SD
10	<i>Passer montanus</i>	1.50	3.23	75	25.65	SD
12	<i>Passer domesticus</i>	1.92	2.71	49	23.96	SD
13	<i>Sitta europaea</i>	1.04	3.23	48	16.64	AUX
14	<i>Dendrocopos syriacus</i>	0.50	1.61	65	15.32	AUX
15	<i>Carduelis carduelis</i>	0.90	1.57	53	15.17	AUX

Avifauna in People's Park (Queen Mary)

Park of Peoples's Park - 17 species are present for the period 26.10.2008 - 30.03.2009 (table3).

Insectivore species are important for the ecosystem in order to maintain its health. They are the first species that must be helped on winter range, support achieved by the construction and placement in parks of artificial nourishing which can take more technical aspects.

Table 3

Fauna and degrees of dominance – People's Park

Nr	Species	I _n KA	I _n %	I _n Bio	I _n Imet	Dominance
1	<i>Columba livia domestica</i>	21.97	16.48	12960	2005.44	AD
2	<i>Streptopelia decaocto</i>	11.90	21.98	4940	859.30	AD
3	<i>Turdus merula</i>	8.70	15.38	1900	409.26	AD
4	<i>Corvus frugilegus</i>	3.66	4.40	4100	504.00	AD
5	<i>Sitta europaea</i>	5.03	9.89	264	91.52	DOM
6	<i>Parus caeruleus</i>	6.41	10.99	182	77.42	DOM
7	<i>Coccythraustes coccythraustes</i>	1.83	4.40	220	57.84	SD
8	<i>Parus major</i>	2.74	4.40	108	41.22	SD
9	<i>Passer domesticus</i>	1.83	2.20	120	36.60	SD
10	<i>Dendrocopos syriacus</i>	1.70	2.96	160	30.51	SD
11	<i>Corvus monedula</i>	0.45	1.10	210	35.33	SD
12	<i>Accipiter nissus</i>	0.45	1.10	367	24.1	SD
13	<i>Passer montanus</i>	0.91	1.10	149	29.76	SD
14	<i>Carduelis chloris</i>	0.91	1.10	60.4	4.9..3	SD
15	<i>Carduelis carduelis</i>	1.37	1.10	48	19.83	SD
16	<i>Phylloscopus collybita</i>	0.39	1.04	270	20.82	AUX
17	<i>Regulus ignicapillus</i>	1.08	0.73	35	14.19	AUX

CONCLUSIONS

➤ The 6 species are antropophile (*Passer montanus*, *P. domesticus*, *Corvus frugilegus*, *C. monedula*, *Streptopelia decaocto* and *Pica pica*) and others 11 (57.89% of the amount) protected in all countries of Europe: *Carduelis chloris*, *Parus caeruleus*, *Parus major*, *Parus palustris*, *Streptopelia decaocto*, *Dendrocopos major*, *Sitta europaea*, *Fringilla coelebs*, *Phylloscopus collybita*, *Alcedo atthis* and *Regulus regulus*.

➤ Absolute dominance is given by 2 species (*Turdus merula* - blackbird and *Corvus frugilegus* - Rook), followed by dominant species in number of 10, subdominant 5, 3 and accidental auxiliaries 1.

➤ The reappearance of blackbird on the list of dominant species is owed to coppice and low and rich crown conifers (*Taxus baccata*).

➤ The increased number of insectivore species may be caused by the location of nourishing.

➤ If there is an intention to protect bird species with extrapolation to their growth in numbers and quality, we believe that the first interventions are needed to increase the quality of habitat value, then the direct operation of protection to the species level is more efficient.

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