

ORNITHOLOGICAL OBSERVATIONS ON THE SPECIES OF BIRDS IN THE ROMAN MUNICIPAL PARK

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INTRODUCTION

Often, birds are considered one of the 15 indicators of life quality in the field of conservation. The presence of small birds has often been suggested as an indicator of other taxa or changes in the environment. They are included in larger environmental monitoring projects (Gregory et al., 2003; Gregory, Skorpilova, Vorisek, & Butler, 2019; Tabur & Ayvaz, 2010). Birds that live in temperate regions over winter depend on the history of their lives as sedentary creatures. It is a period when there is a decrease in resources and a corresponding increase in energy requirements. In this way, this increased energy expenditure is caused by the cold resistance accompanied by an increase in metabolic rate at rest, an important part of the strategy for coping with winter conditions. (Broggi, Hohtola, Orell, & Nilsson, 2005). More than 55% of Earth's people live in cities (Ritchie & Roser, 2018). The urban environment in these areas is characterized by high disturbance levels and environmental changes (Jokimäki and Suhonen 1998). Cities are altered environments where the only areas that resemble natural landscapes are urban parks where the population density is low. It is difficult to maintain biodiversity in these situations because the relationship between species and the environment can be altered. Bird species diversity is often maintained in cities for aesthetic or educational purposes (Buxton, Pearson, Allou, Fristrup, & Wittemyer, 2021; Canedoli, Manenti, & Padoa-Schioppa, 2018; Fontana, Burger, & Magnusson, 2011).

The Roman city is located in the western part of the Plateau of Moldova, in the middle area of Siret. At the confluence terraces between the rivers Moldova and Siret, on relief of alluvial plains and terraces, at an altitude of 204 m. The climate is temperate - continental, influenced by the great culmination of Siret and Moldova, which gives it an excessive continental climate (Iosob, Prisecaru, & Stoica, 2016; Virgă, 2019). The municipal park, called in the past the Great Garden, is a natural park from the former Teiului

Forest. It dates from 1906 and currently covers an area of 3 hectares. This park was designed by the great architect of Roman town, Alexandru Donici. The vegetation, quite rich, is made up of decorative flower species but also dendro-ornamental species introduced over time by horticulturists, such as: *Aesculus hippocastanum*, *Acer campestre*, *Acer negundo*, *Plopulus tremula*, *Quercus robur*, *Ulmus sp.*, *Tylia sp.*, *Sophora japonica*, etc. Among the ornamental shrubs we mention *Hybiscus syriaca*, *Mahonia aqatifolium* different species of *Rosa spp.*, etc. The vegetation in the park offers possibilities for nesting and nidification for certain species of birds such as *Corvus frugilegus* and *C. monedula* (A.V.P.S., 2022; Bilderişanu; & Puşcaşu, 2004; Virgă, 2019). The purpose of this study was to gain an overview of sedentary birds in Roman municipal park.

MATERIALS AND METHODS

The field observations were conducted, in the morning between 08:00 and 13:00, at every 7 days between January 1 - March 27, 2022 in the Roman municipal park (GPS coordinates - 46.93372948523422, 26.92373282705266). With the help of the Panda 22x32 binoculars and the photos taken with a DSLR Canon EOS 1300D camera and a Canon EFS 55-250mm lens, the bird species were identified. Each observation has been documented in the research log, and numerous photographs have been taken throughout the observation period.

RESULTS AND DISCUSSIONS

During the study period, a number of 19 species of birds belonging to four orders were observed in the Roman park. The order of the species of birds identified is shown in figure 1. Most bird species observed belong to the *Passeriformes* order, 14 species. Three species of the order *Piciformes* were observed, while the orders *Accipitriformes* and *Columbiformes* were represented by one species each.

Identified bird species are part of ten families. The best represented bird family during the study period was the *Paridae* family with for specie, followed by the families *Fringillidae*, *Picidae*, with three specie and *Corvidae* with tow specie (fig. 2).

Observations carried out during the study period led to the identification of 19 bird species, which are shown in figure 3. *Corvus frugilegus* (photo 1) and *Parus major* (photo 2) were present on each day of the observations. These birds are present in large groups during the wintering season in the study area. Often two or three pairs of *Corvus monedula* were associated with groups of *Corvus frugilegus*. Some of the other representative species found in Roman park included *Dendrocopos major* (photo 3), *Sitta europaea* (photo 4), *Corvus monedula* (photo 5), *Streptopelia decaocto* (photo 6), *Carduelis carduelis* (photo 7), *Cyanistes*

caeruleus (photo 8), *Passer montanus* (photo 9). There were low abundances of *Certhia familiaris* (photo 10), *Poecile palustris* (photo 11), *Accipiter nisus* (photo 12), *Chloris chloris* (photo 13), *Coccothraustes coccothraustes*, *Leiopicus medius* (photo 14), *Periparus ater*, *Picus viridis*, *Turdus merula* (photo 15) and *Turdus viscivorus* (photo 16) that were observed in one or two days of observations. Most of the species observed wander randomly looking for food individual or in flocks. It is common to see great tit associating with Eurasian blue tit and sparrows, the former approaching people's homes in search of food. According to IUCN (**IUCNredlist, 2022) any of the species identified in this study is in danger of world disappearance, however *Corvus frugilegus* has a vulnerable species status in Europe being declining (table 1).

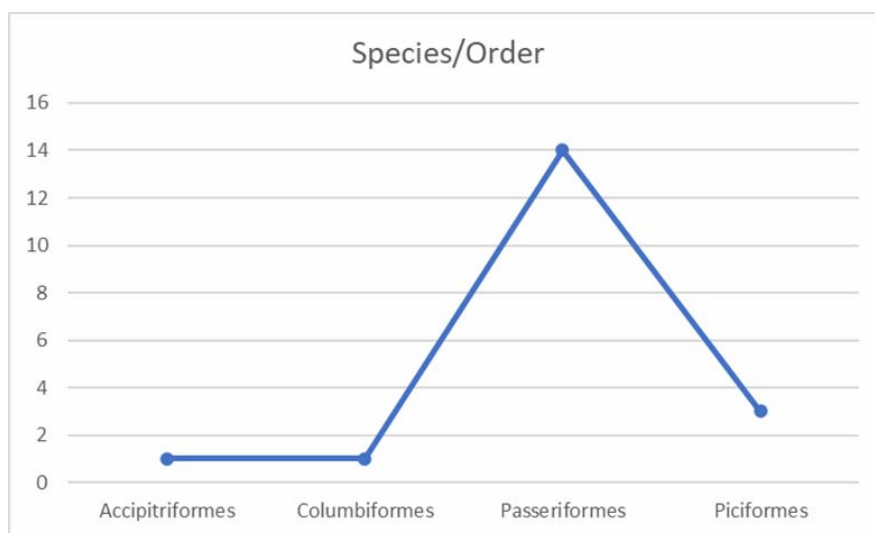


Fig. 1 Order of bird species identified during the study period

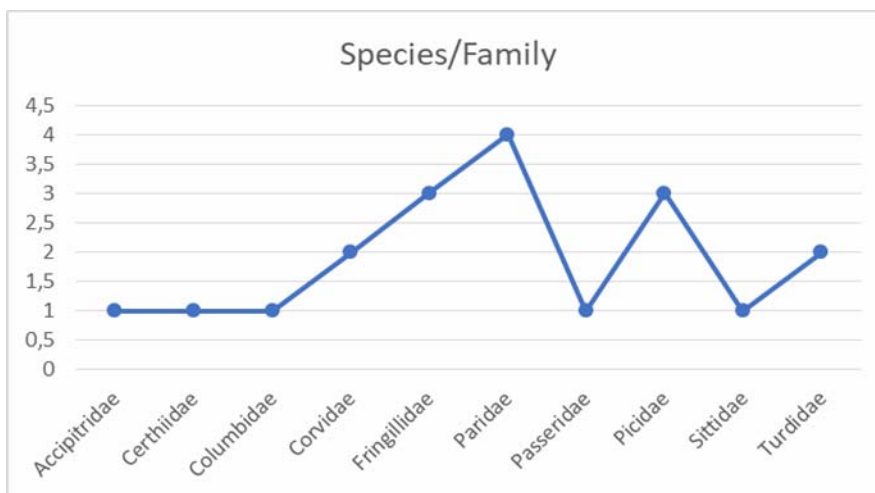


Fig. 2 Family of bird species identified during the study period

Table 1. Extinction risks posed by the birds in the Roman park Globally and in Europe conform IUCN

Nr. crt	Popular name	Specie	Statut IUCN Red List	
			World	Europe
1	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	LC	LC
2	European Goldfinch	<i>Carduelis carduelis</i>	LC	LC
3	Eurasian Treecreeper	<i>Certhia familiaris</i>	LC	LC
4	European Greenfinch	<i>Chloris chloris</i>	LC	LC
5	Hawfinch	<i>Coccothraustes coccothraustes</i>	LC	LC
6	Rook	<i>Corvus frugilegus</i>	LC	VU
7	Eurasian Jackdaw	<i>Corvus monedula</i>	LC	LC
8	Eurasian Blue Tit	<i>Cyanistes caeruleus</i>	LC	LC
9	Great Spotted Woodpecker	<i>Dendrocopos major</i>	LC	LC
10	Middle Spotted Woodpecker	<i>Leiopicus medius</i>	LC	LC
11	Great Tit	<i>Parus major</i>	LC	LC
12	Eurasian Tree Sparrow	<i>Passer montanus</i>	LC	LC
13	Coal Tit	<i>Periparus ater</i>	LC	LC
14	Eurasian Green Woodpecker	<i>Picus viridis</i>	LC	LC
15	Marsh Tit	<i>Poecile palustris</i>	LC	LC
16	Eurasian Nuthatch	<i>Sitta europaea</i>	LC	LC
17	Eurasian Collared-dove	<i>Streptopelia decaocto</i>	LC	LC
18	Eurasian Blackbird	<i>Turdus merula</i>	LC	LC
19	Mistle Thrush	<i>Turdus viscivorus</i>	LC	LC

*LC – Least concern

*VU – Vulnerable

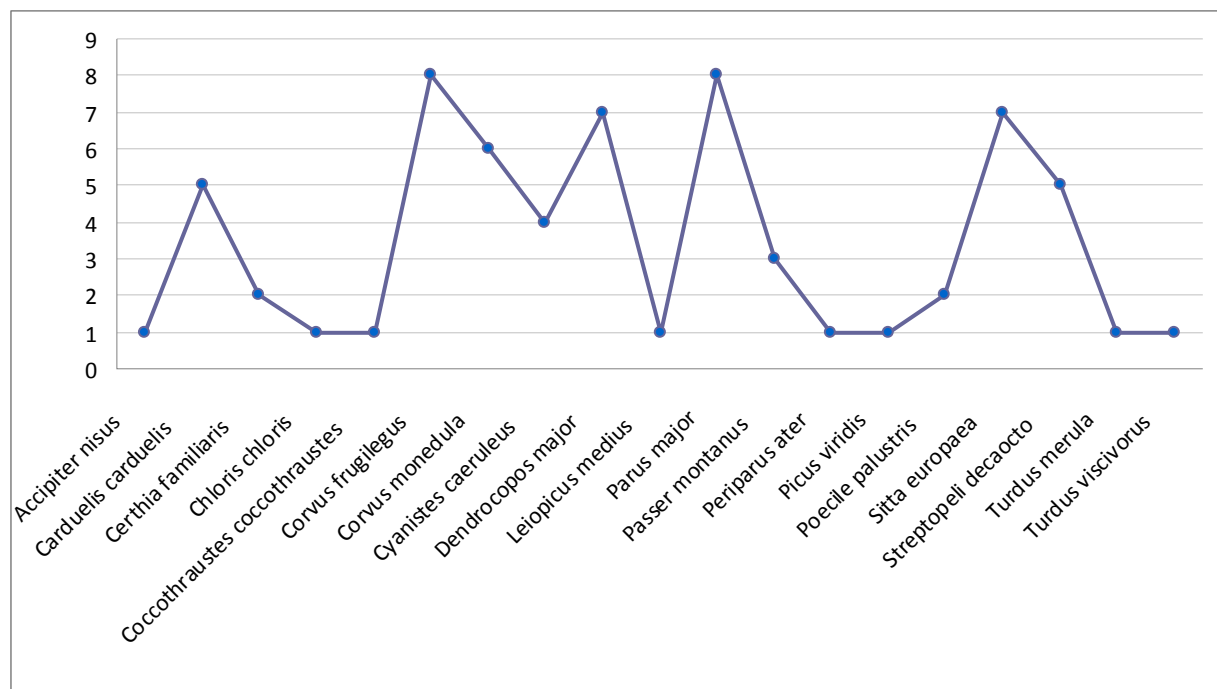


Fig. 3. Bird species identified in the municipal park of Roman during the study period

CONCLUSIONS

During the study period, 19 species of birds belonging to ten families and four orders were spotted in Roman municipal park. The vegetation is quite rich and that is why this area can be managed more

efficiently by the local administration to increase the diversity of bird species.

The avifauna of Roman has been relatively little studied but *Corvus frugilegus* and *Parus major* were present on each day of the observations, makes them representative species for the Roman municipal park. However, the winter season is a time when

conservation measures need to be taken to minimize the decline of all species that are identified and adapted to the urban environment.

According to IUCN any of the species identified in this study is not in danger of world disappearance, however *Corvus frugilegus* has a vulnerable species status in Europe, being declining.

ABSTRACT

The avifauna of Roman has been relatively little studied, with most observations limited to the preparation of annual reports on the sedentary and passage birds on the hunting grounds managed by the

Association of Hunters and Sport Fishermen (A.V.P.S.) Roman. Photographs that have been shared on various social media platforms by nature lovers, amateur and professional photographers also constitute other observations. During the early part of 2022, we made a survey of the avifauna in Roman park. Field observations took place every week for three months (January-March). During this time period, 19 bird species belonging to four orders and ten families were identified and recorded in the park. In Roman, the municipal park is especially important to sedentary birds, especially in the cold season when they are in search of food.



Photo 1. *Corvus frugilegus* – original photo



Photo 2. *Parus major* – original photo



Photo 3. *Dendrocopos major* – original photo



Photo 4. *Sitta europaea* – original photo



Photo 5. *Corvus monedula* – original photo



Photo 6. *Streptopelia decaocto* – original photo



Photo 7. *Carduelis carduelis* – original photo



Photo 8. *Cyanistes caeruleus* – original photo



Photo 9. *Passer montanus* – original photo



Photo 10. *Certhia familiaris* – original photo



Photo 11. *Poecile palustris* – original photo



Photo 12. *Accipiter nisus* – original photo



Photo 13. *Chloris chloris* – original photo



Photo 14. *Leiopicus medius* – original photo



Photo 15. *Turdus merula* – original photo



Photo 16. *Turdus viscivorus* – original photo

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