

CONSIDERATIONS REGARDING THE COMPARATIVE DYNAMICS OF THE AVIFAUNA IN TWO AQUATIC NATURAL PROTECTED AREAS FROM SOUTH-WESTERN ROMANIA

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Abstract. The study brings together the results of the ornithological observations made during the years 2017-2019 in two nature reserves of aquatic type, of national interest (IUCN category IV), located within the Oltenia Plain, south of the Craiova Municipality (south-west of Romania), namely: Preajba-Făcăi Lacustrine Complex and Adunații de Geormane Lake. In both areas, most bird species were observed during the prevernal, vernal and serotinal seasons, and the fewest during the hiemal season. During all the ecological seasons, the number of observed species was higher in the area of Preajba - Făcăi Lacustrine Complex, as a greater variety and better quality of the habitats was found here. Although not predominant in number, aquatic species are representative for both protected areas, some of them representing the reason for designating these areas as nature reserves. Among the most frequent aquatic species present within both areas, we mention: *Cygnus olor*, *Aythya nyroca*, *Spatula querquedula*, *Anas platyrhynchos*, *Podiceps cristatus*, *Ixobrychus minutus*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Ardea cinerea*, *Egretta garzetta*, *Microcarbo pygmaeus*, *Phalacrocorax carbo*, *Chroicocephalus ridibundus*, *Larus cachinnans*, *Chlidonias hybrida*, *Acrocephalus* sp. Among the identified species, there are some with an internationally unfavourable conservation status. Because both investigated areas are attractive for the local population, for various leisure activities, especially in the hot season, is required the practice of ecological tourism which allows the long-term conservation of bird species.

Keywords: avifauna dynamics, aquatic protected areas, Oltenia Plain.

Rezumat. Considerații privind dinamica comparativă a avifaunei din două arii acvatice naturale protejate, din sud-vestul României. Studiul reunește rezultatele observațiilor ornitologice efectuate pe parcursul anilor 2017-2019, în două rezervații naturale de tip acvatic, de interes național (categoria IV UICN), situate în Câmpia Olteniei, la sud de municipiul Craiova (sud-vestul României): Complexul Lacustru Preajba-Făcăi și Lacul Adunații de Geormane. În ambele arii, cele mai multe specii de păsări au fost observate în sezonul prevernal, vernal și serotinal, iar cele mai puține în sezonul hiemal. Pe parcursul tuturor sezoanelor ecologice, numărul speciilor observate a fost mai crescut în aria Complexului Lacustru Preajba – Făcăi, aici găsindu-se o varietate mai mare și o calitate mai bună a habitatelor. Deși nu sunt predominante ca număr, speciile acvatice sunt reprezentative, unele dintre ele constituind obiectul desemnării acestor arii ca rezervații naturale. Dintre speciile cele mai frecvente în ambele arii, exemplificăm: *Cygnus olor*, *Aythya nyroca*, *Spatula querquedula*, *Anas platyrhynchos*, *Podiceps cristatus*, *Ixobrychus minutus*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Ardea cinerea*, *Egretta garzetta*, *Microcarbo pygmaeus*, *Phalacrocorax carbo*, *Chroicocephalus ridibundus*, *Larus cachinnans*, *Chlidonias hybrida*, *Acrocephalus* sp. În totalul de specii identificate există unele cu statut de conservare nefavorabil în plan internațional. Deoarece ambele arii investigate sunt atractive pentru populația locală, pentru diverse activități de agrement, mai ales în sezonul cald, se impune practicarea unui turism ecologic care să permită conservarea pe termen lung a speciilor de păsări.

Cuvinte cheie: dinamica avifaunei, arii acvatice protejate, Câmpia Olteniei.

INTRODUCTION

The studied aquatic areas are IUCN category IV nature reserves of national interest: the Adunații de Geormane Lake (code: 2393) – with a surface of 102 ha and Preajba-Făcăi Lacustrine Complex (code: 2394) – with a surface of 28 ha, both designated on the basis of national legislation regarding the establishment of new protected natural areas (***, 2000). In both areas, the final goal is the protection of certain fauna elements.

According to the GIS analysis, the two areas are adjacent to a site of community interest, namely ROSCI0045 Jiu Corridor – in the W (at a distance of at least 2.19 km), respectively to the special avifaunistic protection area ROSPA0023 Jiu-Danube Confluence - in NW, W, SW and S (at a distance of at least 2.02 km) (***, 2015).

The two areas have common geomorphological, hydrographic, climatic features, being located within the Oltenia Plain (a subunit of the Romanian Plain), on the upper eastern terraces of the Jiu River (an important tributary of the Danube River), south of Craiova (the largest urban center in the south-west of Romania). From a climatic point of view, the investigated areas present a temperate-continental climate with Mediterranean influences, generated by the penetration of different air masses, characterized by hot and dry summers, relatively cold winters, short springs and long autumns (MARINICĂ & MARINICĂ, 2016).

Other common features of the two areas result from their ecological characteristics: the presence of lacustrine ecosystems, interspersed and adjacent with semi-aquatic ecosystems (marshlands, alluvial forests) and terrestrial ecosystems (grasslands, arable lands, woodlands/forest, belts/clumps). Both areas are known as tourism and leisure facilities, such as sport fishing, being close to several residential areas, including an urban area (25 km south of Craiova for area 2393 and 6 km south of Craiova for area 2394, respectively); they are also close to the Jiu River (about 2.3 km, respectively, about 2 km.) - Fig. 1. The access to the two areas is ensured by the national road DN 55 (Craiova - Bechet) and then the communal roads (DC 93 Făcăi - Preajba, respectively DC 28 Bratovoiești - Bădoși).

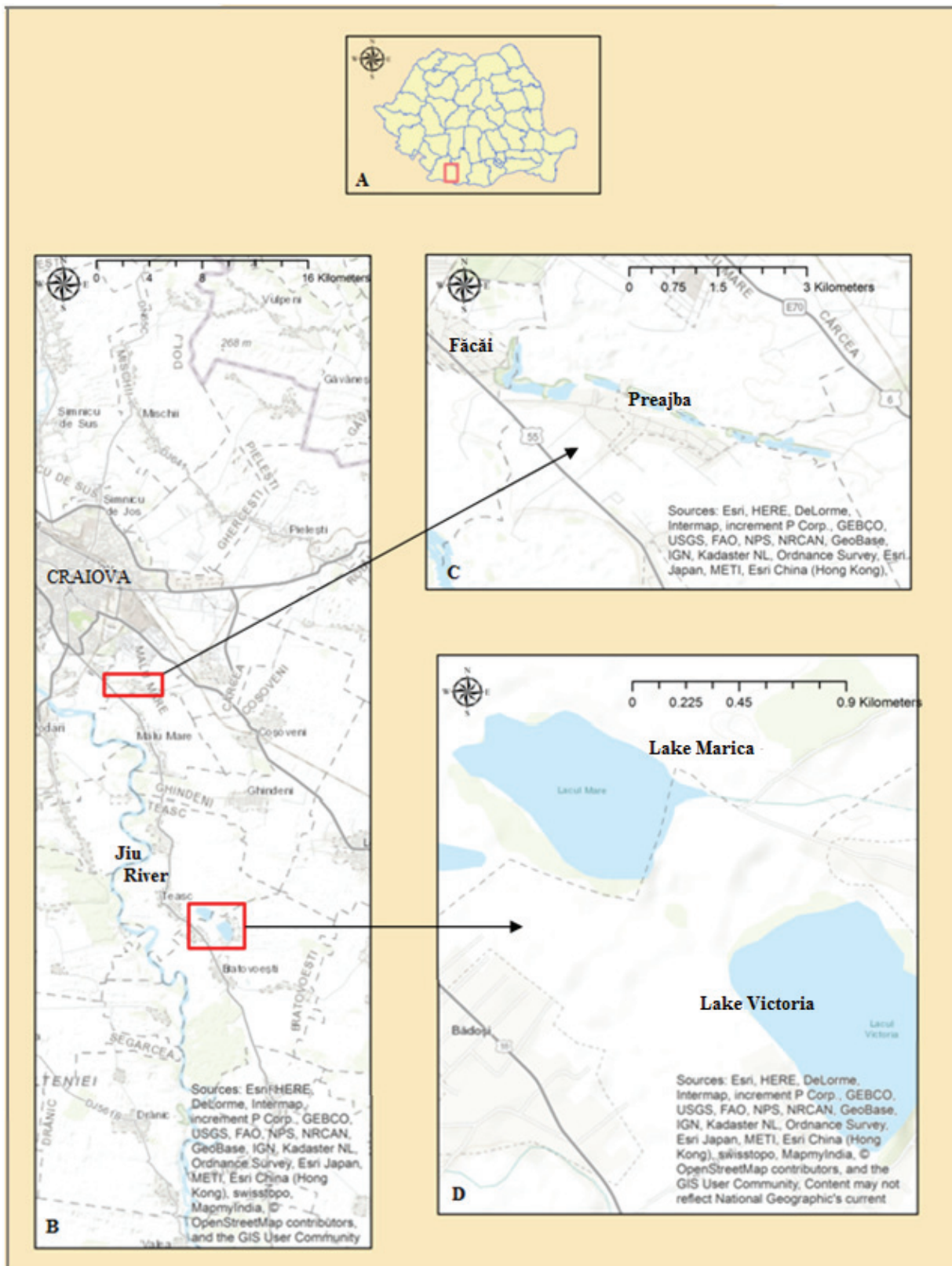


Figure 1. A: The location of Natural Areas in Romania. B: Location of areas in the Dolj county (the distance between these areas and the Jiu River, respectively the Craiova Municipality). C: Preajba-Făcăi Lacustrine Complex. D: Adunații de Geormane Lake. Sources: ArcMap 10.2.2.

The Adunații de Geormane Lake is a lacustrine complex with two distinct aquatic surfaces, namely Victoria Lake and Marica Lake, connected through a canal that drains the water surplus to the Jiu River. The hydrological characteristics of the lakes are influenced by the flow of the tributary streams, the rainfall regime and the groundwater

that varies both in depth and flow; thus, a minimum is recorded in winter, and a maximum at the end of spring and early summer. The aspect of the lake is typical for plain areas, having low, sandy shores, with aquatic macrophytes from place to place (reed and / or cattail, etc.) and small clumps of trees (*Populus* sp., *Salix* sp., *Taxodium distichum*); the water mass is often overpopulated with phytoplankton. The immediate surroundings of the lake are covered by open, generally flat grasslands and flooded land, with rare tree specimens / forest belts. The first data on the fauna quality and composition of the lake were published by MARX (1967, 1968). The lake is important for the number of fish species, being an attractive area for sport fishing (GOGA, 2005). In recent years, an assessment of the quality of the lake water has been considered, in order to develop strategies for the rehabilitation and conservation of the aquatic ecosystems affected by anthropogenic factors (GAVRILESCU et al., 2017).

The Preajba-Făcăi Lacustrine Complex is made up of springs, marshes, small reservoirs, disposed along the Valea Preajba river (a small tributary of the Jiu River). The reservoirs in this complex are between hilly slopes on certain sectors, covered by arable land and pastures; the aquatic surface of these lakes is smaller upstream and gradually increases downstream, along with their depth. The surface of the lakes is between 0.4 and 4.2 ha and the depth varies between 0.6 and 2.8 m. From a qualitative point of view, the lakes are eutrophic, rich in phytoplankton, periphyton and aquatic macrophytes (CIOBOIU, 2014). The immediate surroundings of the chain of reservoirs are largely covered by various species of trees (*Populus canadensis*, *P. nigra*, *Salix alba*, *S. fragilis*, *Gleditsia triacanthos*, *Ailanthus altissima*, *Robinia pseudoacacia*, *Prunus cerasifera*, *Juglans regia*, etc.) and shrubs (*Crataegus monogyna*, *Prunus spinosa*, *Rosa canina*, *Rubus fruticosus*, *Amorpha fruticosa*, *Cornus sanguinea*, etc).

These biocenotic components are the basis of the trophic pyramid, in which a significant place is occupied by the bird species.

The biogeographic peculiarities of the two areas confer some advantages for ornitho-fauna, even if the presence of anthropogenic factors is significant. An inventory of the avifauna was made only in the protected area Preajba-Făcăi Lacustrine Complex (BĂLESCU, 2015; BĂLESCU & GACHE, 2017), while no scientific ornithological data have been published for the Adunații de Geormane Lake so far; in addition, the anthropic dynamism of both protected areas requires continuous and complex research.

Generally, the avifauna of the Oltenia Plain has been little studied over time. There are only a few more recent studies that have contributed to the knowledge of the bird communities and, implicitly, of the biodiversity in the southwest plain area of the country (RIDICHE & BĂLESCU, 2012; BĂLESCU & RIDICHE, 2013; BĂLESCU, 2014; RIDICHE et al., 2014a, b; RIDICHE & MUNTEANU, 2015; RIDICHE & BĂLESCU, 2019). Therefore, in this study we highlight the scientific and ecological importance of plain areas in the broad context of biodiversity conservation and propose the use of such areas in ecotourism, especially for bird-watching.

MATERIAL AND METHODS

The investigations carried out in 2017-2019 were based on classical ornithological methods and materials (BIBBY et al. 2000). As materials we used optical equipment (Bushnell binoculars 12x40, Zeiss Jena 10x50, Canon Sx50HS camera) and guides for determining species (DELIN & SVENSSON, 2016; SVENSSON et al. 2017). Among the main methods we exemplify: the method of transects, observation in fixed or moving points, photography, filming. The observations were made during the 6 ecological seasons (prevernal, vernal, aestival, serotinal, autumnal, hiemal). Depending on the season, both the duration of observations on a day trip (between 4 hours in winter - 8 hours in summer) and the number of trips, mostly in the morning (between 7 a.m.-3 p.m.), rarely in the afternoon (4:30 p.m.-8:30 p.m.) varied in the two areas. At the Preajba-Făcăi Complex, the trips were made once a month. At Adunații de Geormane Lake, monthly trips were made between March and September, while in the cold seasons (October-February) the trips were made once every two months. The number of days of observations during the three years can be found in Table 1.

Table 1. Distribution of observation days in the researched areas during 2017-2019.

Area	Month												Total days	
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
Preajba - Făcăi Lacustrine Complex	3	3	3	3	3	3	3	3	3	3	3	3	3	36
Adunații de Geormane Lake	1	2	3	3	3	3	3	3	3	2	1	2	29	

During the research, for all the identified species we noted the phenology, the estimated numbers, the relationship with the biotopes and the nesting possibilities. The processed data are synthesized in Table 2. The distribution of species in the main ecological categories (aquatic, terrestrial) was in accordance with CĂTUNEANU et al. (1978). The avifauna spectrum in the two areas is also analysed from the point of view of the threat status at a national (MUNTEANU, 2005) and international level (<https://www.iucnredlist.org/resources>) - Table 2. The systematic list of bird species was achieved according to the Avibase – the global bird database (modern current systematic list) (<https://avibase.bsc-eoc.org/familytree.jsp?lang=EN>).

RESULTS AND DISCUSSIONS

During our research, we registered 91 species at the Preajba-Făcăi Lacustrine Complex and 75 species at the Adunații de Geormane Lake, with 73 species being common in both areas, as shown in Table 2. Most of the inventoried species come from the terrestrial biotopes (forest belts, agricultural lands, meadows, anthropic settlements), interspersed or located in the immediate vicinity of the wetlands of the two protected areas. A number of 43 terrestrial species were observed in both areas. We mention some arboreal species (*Columba* sp., *Picus viridis*, *Dendrocopos* sp., *Coracias garrulus*, various passerines), bush species (*Lanius collurio*, *L. minor*, *Carduelis carduelis*, *Emberiza calandra*, *Sylvia communis*), terrestrial species (*Phasianus colchicus*, *Perdix perdix*, etc.) and synanthropic ones (*Streptopelia decaocto*, *Ciconia ciconia*, *Passer domesticus*, *P. montanus*, *Hirundo rustica*, etc.). A number of 12 species of birds (*Circaetus gallicus*, *Falco subbuteo*, *Oriolus oriolus*, *Anthus trivialis*, *Chloris chloris*, *Emberiza citrinella*, *Cyanistes caeruleus*, *Sylvia borin*, *Muscicapa striata*, *Phoenicurus ochruros*, *Saxicola rubetra*, *Turdus philomelos*) were reported only in the Preajba-Făcăi Lacustrine Complex protected area and one species (*Circus cyaneus*) was observed only in the protected area of the Adunații de Geormane Lake.

Although not predominant in number, the aquatic species are representative of both protected areas. Most of the aquatic species recorded by us were stationary on the water surface or in the aquatic macrophytes in the perimeter of the protected areas.

The vast majority (30 species) of the observed aquatic species can be found in both areas. Among the most frequent ones, we mention: *Aythya nyroca*, *Spatula querquedula*, *Anas platyrhynchos*, *Microcarbo pygmaeus*, *Phalacrocorax carbo*, *Ixobrychus minutus*, *Ardeola ralloides*, *Ardea cinerea*, *Egretta garzetta*, *Chroicocephalus ridibundus*, *Larus cachimans*, *Chlidonias hybrida*, *Acrocephalus* sp. In addition, other six aquatic species (*Spatula clypeata*, *Ardea purpurea*, *Himantopus himantopus*, *Circus aeruginosus*, *Alcedo atthis*, *Emberiza schoeniclus*) were reported only in the Preajba-Făcăi Lacustrine Complex protected area and one species (*Tringa stagnatilis*) was observed only in the protected area of the Adunații de Geormane Lake. The numerical distribution of the bird species within the two protected areas according to the biotope is rendered in Fig. 2.

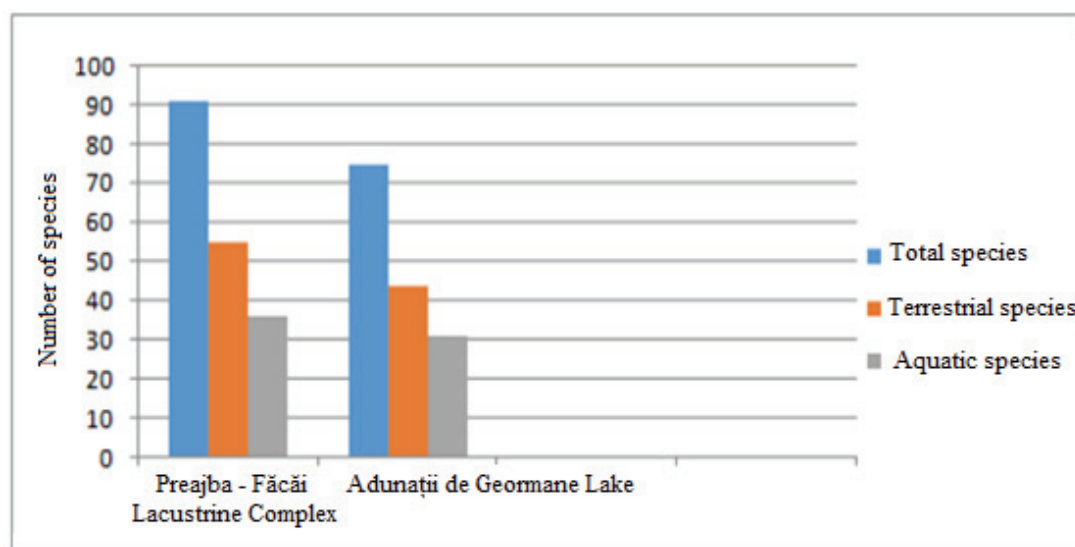


Figure 2. Distribution of the bird species in the two protected areas according to the biotope.

Although the surface of the Preajba - Făcăi Lacustrine Complex is much smaller compared to the Adunații de Geormane Lake, we found out that there are important differences regarding diversity and the number of species that make up the bird fauna of these areas. We consider that these differences are primarily induced by the variety and quality of the habitats that birds use for feeding, sheltering and / or nesting. For example, while most of the reservoirs that make up the Preajba - Făcăi Lacustrine Complex are surrounded by dense aquatic macrophytes (reed, cattail, etc.) and numerous clumps of trees from the native flora, many of them scrubby and old, the shores of the Adunații de Geormane Lake are low, sandy, with aquatic macrophytes from place to place and small clumps of trees. In addition, the phenomenon of eutrophication, but also the presence of the anthropogenic factor, are more pronounced in the area of the Adunații de Geormane Lake. We do not exclude that some differences in the avifaunistic composition of the two areas might be due to briefer investigations in the area of the Adunații de Geormane Lake.

There are also differences between the two areas regarding the phenological dynamics of the bird species (Table 2, Fig. 3). During the 6 phenological seasons, the number of observed species was higher in the area of the Preajba - Făcăi Lacustrine Complex.

In the prevernal season (March 1 - May 1), we recorded the highest number of bird species (67 species at Preajba - Făcăi Lacustrine Complex and 57 species in the area of the Adunații de Geormane Lake). This situation is

normal as spring migration takes place during this season and bird species from several phenological categories (winter guests, passage species) can stay together in the two areas for a short period of time, especially if we take into account that the nearby Jiu River is a migration corridor for many bird species (POPESCU, 1974; MUNTEANU, 2011; RIDICHE & SÂNDOR, 2016).

In the vernal season (May 1 - June 15), which is mainly marked by reproduction phenomena, we also found a significant number of species (65 in the area of Preajba - Făcăi Lacustrine Complex and 55 in the area of Adunații de Geormane Lake). Many of the species observed in these seasons nest within the two areas or in neighbouring areas. Birds that breed within the perimeter of the protected areas are, in particular, aquatic species (*Aythya nyroca*, *Spatula querquedula*, *Anas platyrhynchos*, *Podiceps cristatus*, *Gallinula chloropus*, *Fulica atra*, *Ixobrychus minutus*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Himantopus himantopus*, *Chlidonias hybrida*, *Acrocephalus* sp.).

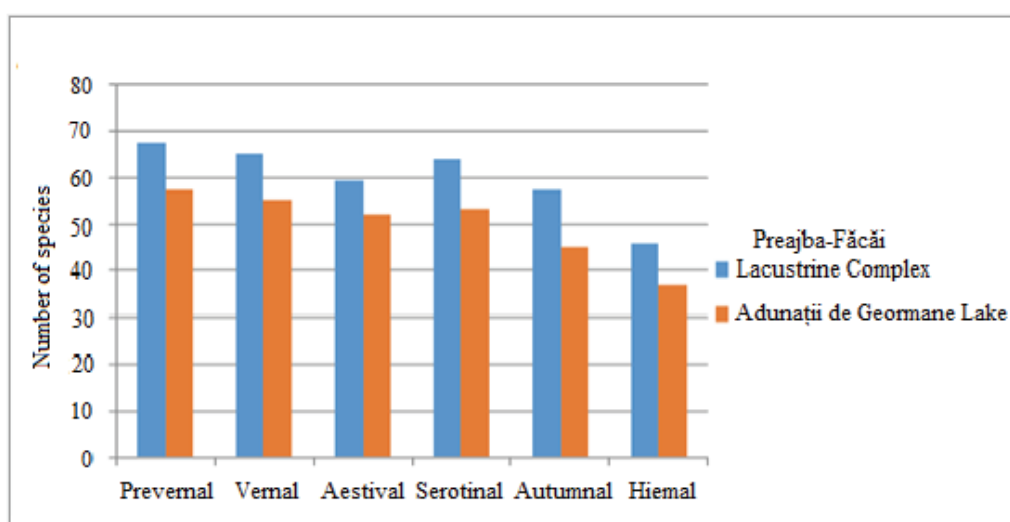


Figure 3. Distribution of the bird species in the two protected areas according to the phenological dynamics.

In the aestival season (June 15 - July 15) the number of inventoried species was reduced in both areas (59 species in the area of the Preajba - Făcăi Lacustrine Complex and 52 in the area of the Adunații de Geormane Lake). This is also due to the fact that some bird species leave the habitats of these areas after the end of the breeding cycle.

During the serotinal season (July 15 - September 15) that precedes and includes autumn migration, an increase in species diversity is noticed, and then (during the autumnal season: September 15 - November 1), this diversity reduces as changes occur in the climate conditions specific to the autumn season.

The fewest species (46 within the area of Preajba - Făcăi Lacustrine Complex and 36 species in the area of the Adunații de Geormane Lake) were recorded in the hiemal season (November 1 - March 1) corresponding to the coldest season of the year. During this season, we mainly identified birds from the sedentary / resident species category and winter visitors, which can withstand less favourable conditions or can adapt their trophic regime depending on the offer of the existing habitats. In milder and later winters (long periods with temperatures above 0°C) birds belonging to the summer visitors or passage species (example: *Ardea cinerea*, *A. alba*, *Microcarbo pygmaeus*, *Phalacrocorax carbo*) can also be observed, situation found in other anthropogenic or natural aquatic basins from our country (GACHE, 2002; KISS, 2002; MITRULY, 2002; MUNTEANU, 1978, and other).

In terms of the threat category, we noticed that most of the identified species are safe at a global and European level (according to the IUCN red list). However, there endangered species at an international level (*Aythya ferina*, *Vanellus vanellus*, *Circus cyaneus*, *Alcedo atthis*) are also present, along with species whose protection is required at a national level, being registered in the Red Book of the Vertebrates of Romania as vulnerable species (*Aythya nyroca*, *Ciconia ciconia*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Microcarbo pygmaeus*, *Upupa epops*) and endangered species (*Ardea purpurea*, *A. alba*, *Egretta garzetta*) (MUNTEANU, 2005). For these species, in particular, the conservation of the necessary habitats is a priority. This condition can be fulfilled by informing and raising awareness of the population regarding the avifaunistic importance of these wetlands, especially if we take into account that both investigated areas are attractive for the local population for various leisure activities. In this regard, we propose the practice of ecological tourism ("Nature Friendly Tourism") mainly based on the observation and knowledge of birds ("Birdwatching") and their role in the ecosystem balance.

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CONCLUSIONS

In the present study, we bring our contribution to the knowledge of the bird communities and, implicitly of the biodiversity from the Oltenia Plain, by comparatively presenting the composition and dynamics of bird species in two protected natural areas, namely the Preajba-Făcăi Lacustrine Complex and the Adunații de Geormane Lake.

Although the two areas have several common characteristics (climatic, geomorphological, hydrographic and ecological), we notice that there are qualitative and quantitative differences in the avifauna. We consider that these differences are due to the greater variety and better quality of the habitats in the Preajba-Făcăi Lacustrine Complex. In this area, the number of the observed species was higher during all ecological seasons. In both areas, most species were observed in the prevernal, vernal and serotinal seasons, when bird species of several phenological categories stay together, which entitles us to consider these areas as a place of refuge for birds that migrate along the Jiu River. Some of the species present in both areas are internationally threatened or require national protection. For them, in particular, the conservation of the habitats necessary for living is a priority. In this sense, we want to highlight the scientific and ecological importance of the plain areas, in the broad context of biodiversity conservation and propose the capitalization of such areas in ecotourism, especially for birdwatching.

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Table 2. Avifauna composition and dynamics from the protected areas: Adunații de Geormane Lake and Preajba-Făcăi Lacustrine Complex (south-western Romania) during 2017-2019.

No	List of species	Ecological category		Estimated numbers		Nesting		Phenological dynamics						Threat category			
		Aquatic	Terrestrial	Preajba	Geormane	Preajba	Geormane	Prevernal	Vernal	Aestival	Serotinal	Autumnal	Hiemal	Romania	Europe	Global	
1.	<i>Cygnus olor</i>	+		•	•	▲	-								-	LC	LC
2.	<i>Aythya ferina</i>	+		•	•	▲?	-								-	VU	VU
3.	<i>Aythya nyroca</i>	+		•	•	▲s	-								VU	LC	NT
4.	<i>Spatula querquedula</i>	+		••	•	▲s	-								-	LC	LC
5.	<i>Spatula clypeata</i>	+		•	-	-	-								-	LC	LC
6.	<i>Anas crecca</i>	+		••	•	-	-								-	LC	LC
7.	<i>Anas platyrhynchos</i>	+		•••	••	▲	▲								-	LC	LC
8.	<i>Coturnix coturnix</i>		+	•	•	-	-								-	LC	LC
9.	<i>Phasianus colchicus</i>		+	•	•	-	-								-	LC	LC
10.	<i>Perdix perdix</i>		+	••	•	-	-								-	LC	LC
11.	<i>Tachybaptus ruficollis</i>	+		•	•	-	-								-	LC	LC
12.	<i>Podiceps cristatus</i>	+		•	•	▲	▲								-	LC	LC
13.	<i>Columba livia domestica</i>		+	•••	••	▲	-								-	LC	LC
14.	<i>Columba palumbus</i>		+	••	•	▲	▲								-	LC	LC
15.	<i>Streptopelia decaocto</i>		+	••	••	▲	▲								-	LC	LC
16.	<i>Cuculus canorus</i>	+	+	•	•	▲	▲								-	LC	LC
17.	<i>Gallinula chloropus</i>	+		••	•	▲	▲								-	LC	LC
18.	<i>Fulica atra</i>	+		•••	••	▲	▲								-	NT	LC
19.	<i>Ciconia ciconia</i>	+		•	•	-	-								VU	LC	LC
20.	<i>Ixobrychus minutus</i>	+		•	•	▲	▲								-	LC	LC
21.	<i>Nycticorax nycticorax</i>	+		•	•	▲	▲?								VU	LC	LC
22.	<i>Ardeola ralloides</i>	+		•	•	-	▲								VU	LC	LC
23.	<i>Ardea cinerea</i>	+		•	•	-	-								-	LC	LC
24.	<i>Ardea purpurea</i>	+		•	-	-	-								P	LC	LC
25.	<i>Ardea alba</i>	+		•	•	-	-								P	LC	LC
26.	<i>Egretta garzetta</i>	+		•	•	▲	-								P	LC	LC
27.	<i>Microcarbo pygmaeus</i>	+		••	•	-	-								VU	LC	LC
28.	<i>Phalacrocorax carbo</i>	+		•	•	-	-								-	LC	LC
29.	<i>Himantopus himantopus</i>	+		•	-	▲s	-								P	LC	LC
30.	<i>Vanellus vanellus</i>	+		•	••	-	-								-	VU	NT
31.	<i>Tringa stagnatilis</i>	+		-	•	-	-								-	LC	LC
32.	<i>Tringa ochropus</i>	+		•	•	-	-								-	LC	LC
33.	<i>Chroicocephalus ridibundus</i>	+		••	••	-	-								-	LC	LC
34.	<i>Larus cachinnans</i>	+		•	••	-	-								-	LC	LC

35.	<i>Chlidonias hybrida</i>	+		••	•	▲	▲									-	LC	LC	
36.	<i>Sterna hirundo</i>	+		•	•	-	-										-	LC	LC
37.	<i>Circaetus gallicus</i>		+	•	-	-	-										-	LC	LC
38.	<i>Circus aeruginosus</i>	+		•	-	-	-										-	LC	LC
39.	<i>Circus cyaneus</i>		+	-	•	-	-										-	NT	LC
40.	<i>Accipiter nisus</i>		+	•	•	-	-										-	LC	LC
41.	<i>Buteo buteo</i>		+	•	•	-	-										-	LC	LC
42.	<i>Athene noctua</i>		+	•	•	-	-										-	LC	LC
43.	<i>Upupa epops</i>		+	•	•	▲	▲										VU	LC	LC
44.	<i>Picus viridis</i>		+	•	•	▲	-										-	LC	LC
45.	<i>Dendrocopos major</i>		+	•	•	▲	▲										-	LC	LC
46.	<i>Dendrocopos syriacus</i>		+	•	•	▲	-										-	LC	LC
47.	<i>Merops apiaster</i>		+	••	••	▲	-										-	LC	LC
48.	<i>Coracias garrulus</i>		+	•	•	▲	▲s										-	LC	LC
49.	<i>Alcedo atthis</i>	+		•	-	-	-										-	VU	LC
50.	<i>Falco tinnunculus</i>		+	•	•	▲	▲										-	LC	LC
51.	<i>Falco subbuteo</i>		+	•	-	▲s	-										-	LC	LC
52.	<i>Oriolus oriolus</i>		+	•	-	▲?	-										-	LC	LC
53.	<i>Lanius minor</i>		+	•	•	▲	-										-	LC	LC
54.	<i>Lanius collurio</i>		+	•	•	▲s	▲										-	LC	LC
55.	<i>Pica pica</i>		+	••	•	▲	▲										-	LC	LC
56.	<i>Corvus monedula</i>		+	••••	•••	▲	▲										-	LC	LC
57.	<i>Corvus frugilegus</i>		+	••••	•••	▲	▲										-	LC	LC
58.	<i>Corvus cornix</i>		+	••	•	▲	▲										-	LC	LC
59.	<i>Passer domesticus</i>		+	•••	••	▲	▲										-	LC	LC
60.	<i>Passer montanus</i>		+	••••	••	▲	▲										-	LC	LC
61.	<i>Anthus trivialis</i>		+	•	-	-	-										-	LC	LC
62.	<i>Motacilla alba</i>	+	+	•	•	▲	▲										-	LC	LC
63.	<i>Motacilla flava</i>	+	+	•	•	▲	▲										-	LC	LC
64.	<i>Fringilla coelebs</i>		+	•	•	-	-										-	LC	LC
65.	<i>Coccothraustes coccothraustes</i>		+	••	••	-	-										-	LC	LC
66.	<i>Chloris chloris</i>		+	••	-	▲?	-										-	LC	LC
67.	<i>Carduelis carduelis</i>		+	••	•	▲?	-										-	LC	LC
68.	<i>Emberiza citrinella</i>		+	•	-	-	-										-	LC	LC
69.	<i>Emberiza calandra</i>		+	••	•	▲	▲										-	LC	LC
70.	<i>Schoeniclus schoeniclus</i> (<i>Emberiza schoeniclus</i>)	+		•	-	-	-										-	LC	LC
71.	<i>Cyanistes caeruleus</i>		+	•	-	-	-										-	LC	LC
72.	<i>Parus major</i>		+	••	••	▲	▲										-	LC	LC
73.	<i>Alauda arvensis</i>		+	•	•	-	-										-	LC	LC
74.	<i>Galerida cristata</i>		+	•	•	-	-										-	LC	LC
75.	<i>Acrocephalus</i>	+		•	•	▲	▲										-	LC	LC

	<i>schoenobaenus</i>																				
76.	<i>Acrocephalus scirpaceus</i>	+		•	•	▲	▲											-	LC	LC	
77.	<i>Acrocephalus arundinaceus</i>	+		••	•	▲	▲												-	LC	LC
78.	<i>Hirundo rustica</i>		+	••	••	▲	▲												-	LC	LC
79.	<i>Phylloscopus trochilus</i>		+	•	•	-	-												-	LC	LC
80.	<i>Phylloscopus collybita</i>		+	•	•	-	-												-	LC	LC
81.	<i>Sylvia borin</i>		+	•	-	-	-												-	LC	LC
82.	<i>Curruca curruca</i> (<i>Sylvia curruca</i>)		+	•	•	▲	-												-	LC	LC
83.	<i>Sylvia communis</i>		+	•	•	▲	▲?												-	LC	LC
84.	<i>Troglodytes troglodytes</i>		+	•	•	-	-												-	LC	LC
85.	<i>Sturnus vulgaris</i>		+	••••	••••	▲	▲												-	LC	LC
86.	<i>Muscicapa striata</i>		+	•	-	▲?	-												-	LC	LC
87.	<i>Erithacus rubecula</i>		+	•	•	-	-												-	LC	LC
88.	<i>Luscinia megarhynchos</i>		+	•	•	▲	▲?												-	LC	LC
89.	<i>Phoenicurus ochruros</i>		+	•	-	-	-												-	LC	LC
90.	<i>Saxicola rubetra</i>		+	•	-	-	-												-	LC	LC
91.	<i>Turdus merula</i>		+	•	•	-	-												-	LC	LC
92.	<i>Turdus pilaris</i>		+	•••	••	-	-												-	LC	LC
93.	<i>Turdus philomelos</i>		+	•	-	-	-												-	LC	LC

Legend: Numerical estimates: • small groups (less than 25 specimens); •• medium groups (25-50 specimens); ••• large groups (50-100 specimens); •••• groups of more than 100 specimens. Nesting: ▲ constantly nesting species; ▲s sporadically nesting species; ▲? possible nesting species. Threat status: NT – Near threatened, VU - Vulnerable, P - Endangered, LC - Low risk.

 Preajba = Preajba-Făcăi Lacustrine Complex

 Geormane = Adunații de Geormane Lake