

THE PRESENT STATUS OF BIRD FAUNA ON THE TERRITORY OF ROSPA0049 PONDS FROM THE VALLEY OF IBĂNEASA - BAȘEU - PODRIGA RIVERS (BOTOȘANI COUNTY, ROMANIA)

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Abstract. This ornithological study presents data on the diversity of bird species recorded on the territory of ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers, during six years of field monitoring activity (2006-2007, 2013-2014, 2019-2022). We identified 137 bird species, and we present quantitative data for the observed bird species, too. The typical or related to the aquatic ecosystem bird species are dominant by diversity and populations all time during the year. We notice the relevance of this territory as a migration stopover point, a breeding site and, sometime, as a wintering area for the bird fauna in the north-eastern Romania. We recorded 83 regular breeding bird species and other 10 species as possible or irregular breeding species in the area. Comparing our data with previous studies developed in area, we present the trends of bird species related to the habitats' dynamic during the last three decades. We identified 34 bird species that appear in Annex 1 to the Birds Directive, 18 of them not mentioned in the official standard form of the Natura 2000 site. Other 41 recorded bird species appear in the Annex 2 of the same directive, 20 species not being mentioned in the official presentation of the site. We met 21 bird species included in the Romanian Red Book of Vertebrates during our monitoring activity in the investigated perimeter.

Keywords: bird fauna, trends, Bașeu River basin, Natura 2000 network.

Rezumat. Starea actuală a diversității ornitofaunei pe teritoriul ROSPA0049 Iazurile de pe valea Ibănesei-Bașeului-Podrigăi (județul Botoșani, România). Acest studiu ornitologic prezintă informații privind diversitatea avifaunei inventariate pe teritoriul sitului ROSPA0049 Iazurile de pe valea Ibănesei – Bașeului – Podrigăi, de-a lungul a șase ani de monitorizare a ornitofaunei (2006-2007, 2013-2014, 2019-2022). Am identificat 137 de specii de păsări și prezentăm, de asemenea, date cantitative pentru speciile de păsări inventariate. Speciile tipice sau care apar temporar în ecosistemul acvatic sunt dominante prin diversitate și efective de-a lungul anului. Subliniem importanța acestui perimetru ca loc de popas pe durata migrației, teritoriu de cuibărit și, în unii ani, ca zonă de iernare pentru păsări în nord-estul României. Am înregistrat prezența a 83 de specii de păsări cert clocitoare, alte 10 fiind specii care cuibăresc neregulat sau sunt posibil clocitoare în acest teritoriu. Comparând datele colectate cu cele din studii anterioare realizate în acest teritoriu, prezentăm tendința populațională a păsărilor în contextul dinamicii habitatelor de-a lungul ultimelor trei decenii. Am identificat 34 de specii incluse în Anexa 1 a Directivei Păsări, 18 lipsind din fișa standard a sitului Natura 2000. Alte 41 dintre speciile inventariate de noi apar în Anexa 2 a aceleiași directive, 24 dintre ele lipsind din prezentarea sitului. De-a lungul activității noastre de monitorizare, am întâlnit 21 de specii de păsări incluse în Cartea Roșie a Vertebratelor din România.

Cuvinte cheie: avifaună, tendințe, bazinul râului Bașeu, rețea Natura 2000.

INTRODUCTION

Located in the Botoșani County, in the north-eastern part of Romania, the territory of ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers (Fig. 1) covers 2766.80 hectares (ha) being part of the Bașeu River basin, with the geographic coordinates 47.933425 northern latitude and 26.930136 eastern longitude. The aquatic surfaces included in the territory of the Natura 2000 site are reservoirs (Cal Alb, Mileanca, Negreni) and ponds (Hudești, Havârna, Lișmanița, Tătărașeni, Vorniceni, Ibăneasa and Hănești) developed as hydro-technical arrangements along the three mentioned rivers starting from the period 1973 – 1976 until the early '90s. As a result, nowadays, the courses of the Bașeu, Podriga and Ibăneasa rivers appear as a series of ponds and reservoirs, covering more than 1000 ha. The main purpose of these aquatic surfaces is their utility as water sources for the surrounding localities, including the Săveni town (Negreni reservoir), and as a source for irrigation in agriculture and fisheries.

The Bașeu River is the main tributary of the Prut River on the area of Botoșani County presenting a length of 106 km and a total surface of about 965 square kilometres (km²). The Bașeu River rises from Culmea Darabanilor and flows into the Prut River at Românești, its hydrographic basin being part of the Moldova Plain (BADEA & DUMITRESCU, 1985). All its tributary rivers, including Podriga and Bodeasa, are temporary courses, presenting large oscillation of the water levels from flooding phenomenon to completely dry. The Bașeu River course has large marsh sectors and dries up during the hot and dry summers. Ibăneasa River is a small tributary of the Jijia River on the left side, presenting a temporary course, too. The south-eastern limit of the ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers is at a distance of 12 km from the ROSPA0058 Stânca-Costești Reservoir.

From Botoșani, access to the perimeter of the Natura 2000 site (Fig. 1) is possible on the national road DN 29 towards Săveni, following the county road DJ 289 to Hănești, for the southern part of the site. From Săveni, the access to the Ibăneasa ponds follows DJ 292 towards the Vorniceni village. For the reservoirs and ponds located in the upper Bașeu and Podriga, DJ 293 and various communal roads should be used towards the Mileanca, Havârna and Negreni – Tătărașeni villages. Another way to reach the northern part of the site is by the DN 29A towards Dorohoi and Hudești, from where access is possible only by communal roads towards Havârna, with jeep cars and in good weather conditions.

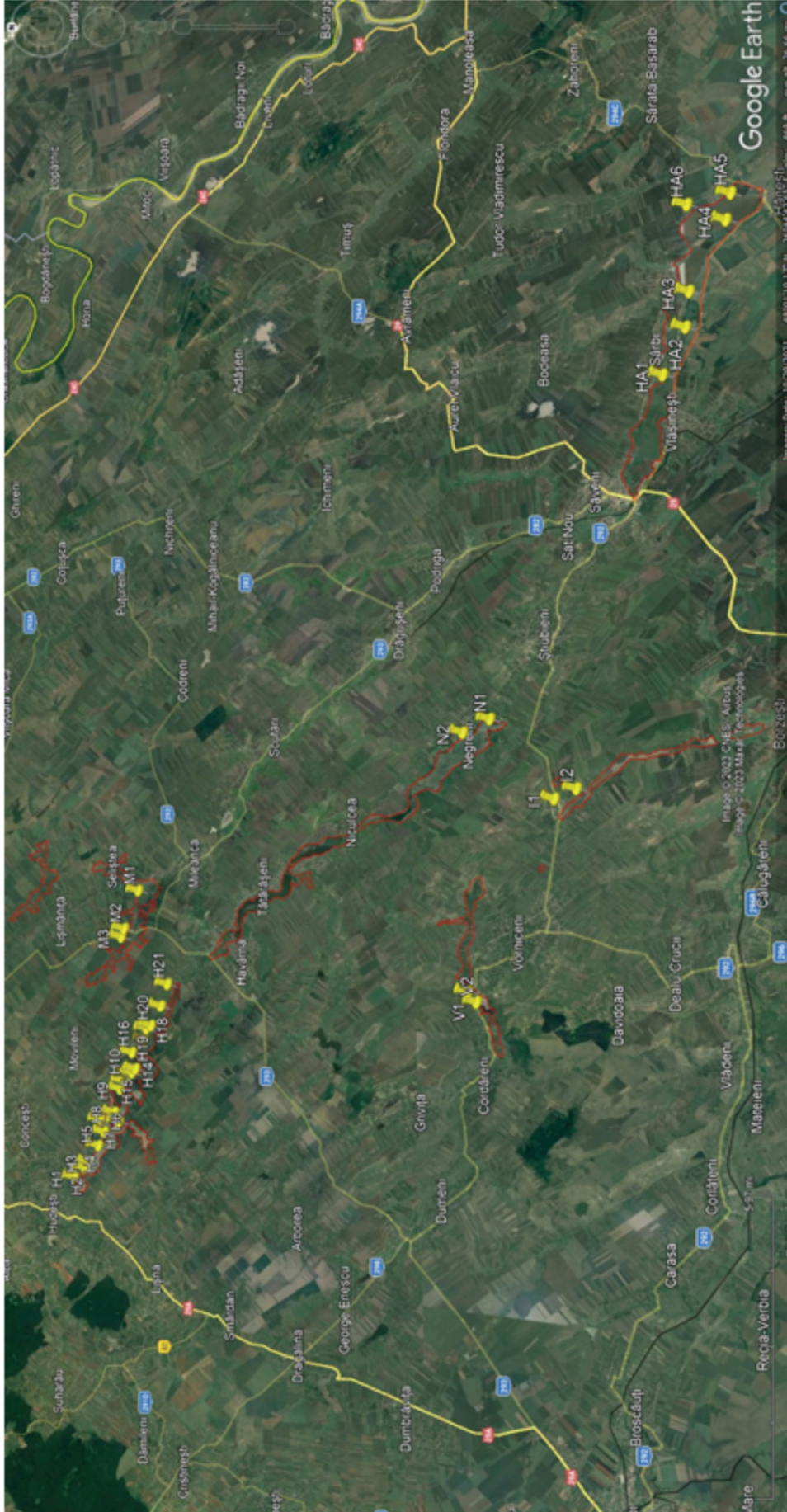


Figure 1. The official map of ROSPA0049 Ponds from the Valley of Ibăneasa – Bașeu – Podriga Rivers and fixed points of observation along the ponds and reservoirs used during our studies. Legends of fixed points: H1 – H21 = Hudești – Cal Alb – Havârna; M1 – M3 = Mileanca; N1 – N2 = Negreni, V1 – V2 = Vornicea; HA1 – HA6 = Hânești (Sources: Satellite image, March 2023, Google Earth).

The climate of the north-eastern part of Romania is temperate-continental, with eastern and Arctic influences. Winters are generally long and very cold, while summers are hot and dry, but in the last decade – in the context of the global climate change - winters became strong in middle January, while the snow and ice-bed disappear only in the middle or even in the last decade of March. The average annual temperature varies between 8 - 10 °C along the hydrographic basin of Bașeu River. The average annual rainfalls are about 500 millimetres, but severe drought was a dominant phenomenon during the 15 years in the whole area. The dominant winds come from the north and north-eastern directions during the wintering time, respectively from the north-western direction in summertime.

The territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers appears as a mosaic of habitats (MITITELU & CHIFU, 1993). The grasslands with shrubs and bushes (*Sambucus nigra*, *Prunus spinosus*, *Rosa canina* etc.) respectively the open waters appear as dominant habitats along the ponds and reservoirs. The compact reed beds with sedges (*Carex* sp.), rushes (*Schoenoplectus lacustris* and *Juncus* sp.) represent another significant habitat in the area, while the submerged vegetation (*Persicaria amphibia*, *Potamogeton* sp., *Myriophyllum* sp., *Elodea* sp.) may become abundant in some areas (for example, Vorniceni and in tail perimeter of Hănești). Small clumps of poplars (*Populus alba*) and willows (*Salix* sp.) are present along the banks of Hudești – Havârna ponds, respectively, a meadow forest with poplars, willows and osiers exists on the island from Hănești lake. One plantation of acacia (*Robinia pseudoacacia*) covers the slopes around the dam of Cal Alb reservoir.

The aquatic fauna is rich, represented by invertebrates such as worms, crustaceans, molluscs, and various insect larvae, but also vertebrates such as fish species (*Cyprinus carpio*, *Carassius gibelio*, *Alburnus alburnus*, *Scardinius erythrophthalmus*, *Cobitis taenia*, *Perca fluviatilis*, *Sander lucioperca* etc.). The herpetofauna comprises amphibians (*Pelophylax* kl. *esculentus*, *Triturus cristatus*, *Lissotriton vulgaris*) and reptile species (*Emys orbicularis*, *Lacerta agilis*, *L. viridis*, *Natrix natrix*, *N. tessellata*). Among mammals, we notice the presence of medium size and small carnivores (*Vulpes vulpes*, *Mustela nivalis*, *M. putorius*), and rodents (*Spermophilus citellus*, *Arvicola terrestris*, *Ondatra zibethica*, *Apodemus agrarius*, *Microtus arvalis* etc.).

The first ornithological data related to the Botoșani County sector of Prut River basin regards the perimeter of Stâncă - Costești reservoir (ION & CÎMPEANU, 1990; ION, 1991). One comprehensive ornithological study focused on the bird fauna dynamic in the Romanian part of Prut River basin, was performed starting from 1992 until 2001, and presented qualitative data and quantitative analysis for the various groups of aquatic and semi-aquatic bird species for this area (GACHE, 2002). This study identifies the first three Important Birds Areas (IBA) in the Prut River basin – Stâncă reservoir, Jijia and Miletin Rivers' ponds, respectively Cârja – Mața – Rădeanu ponds, too. The first study related to the bird fauna from the Bașeu River basin appeared during the same year as the result of a monitoring programme on the biodiversity in the Prut River basin asked by Regia Apele Române – ABA Prut-Bârlad (GACHE et al, 2002). The ornithological importance of the area is mentioned in some synthesis works (MUNTEANU et al., 2002; MUNTEANU, 2004; MÜLLER et al., 2005; PAPP & FÂNTÂNĂ, 2008; BRÎNZAN, 2013). We also mention the most recent analysis on the status of biodiversity from the territory of the Bașeu River basin (ZBUGHIN et al., 2015).

The designation of ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers (H. G. no. 1284/24.20.2007) follows the conservation of 40 aquatic and semi-aquatic bird species, representing an important territory especially during the birds' migration in our country as resulting from the official standard form completed in December 2006 and updated in November 2019. The Nature 2000 site has an approved management plan (O. M. no. 1354/2016) elaborated by the Association Tinerii Ecologi Români din Iași (TERIS) through a field study performed during the years 2014 – 2015 with the financial support by POS Mediu 2007 – 2013.

METHODS AND PERIOD OF STUDY

For the present study, our field investigations on the bird fauna from the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers began during May 2006 until July 2007 in the perimeter of the Hănești Lake. In May 2007, we visited the central island of the lake by boat. We visited this area and the section of the Hudești – Havârna ponds occasionally, three times every year (breeding season, spring and autumn migration) in 2002 - 2004, too; in early June 2003, we used the boat to reach and evaluate the breeding colonies from the central island on the Hănești Lake. For one year (March 2013 - March 2014), we performed a bird monitoring activity on the territory of the Ibăneasa ponds, respectively the Hudești – Havârna ponds, the Cal Alb and Negreni reservoirs, and the Hănești Lake. Beginning with March 2019 and until June 2022, we started a regular monitoring programme, visiting every month, during a two-days field trip, the following areas of the Nature 2000 site: the Hudești ponds, the Cal Alb reservoir, the Havârna ponds, the Hănești Lake and the ponds on the Bașeu River, the Mileanca reservoir on the Podriga River, and the Vorniceni pond on the Ibăneasa River. We included the last perimeter in our monitoring activity only during the last year of study.

As we can see on the map (Fig. 1), the investigated territory presents a wide extension from north to south and from west to east. We tried to improve the quality of the collected ornithological data, avoiding double counting of the bird population and losing the presence of some birds in the area, especially during the migration time. For this reason, we organised our field activity starting from the north of investigated area (Hudești – Havârna ponds) during the spring migration and breeding season, respectively from the south (Hănești Lake and ponds) during autumn migration.

The monitoring of birds was done using the methods of transect and fixed points, following the western bank for the Hudești ponds, the Cal Alb and Mileanca reservoirs, the Hănești Lake and ponds respectively, the southern and eastern bank for the Vorniceni pond and the Hănești Lake and ponds. For the Havârna ponds, transect followed the local road along the middle part of this series of ponds and some secondary dikes inside the fishery. We used the same transects and fixed points (Fig.1) during the whole period of study.

We identified the birds through direct observation by binoculars (Pentax 10x42 DCF HRc, Olympus 8-16x40 and Nikon Akulon 8 – 24x) and telescope (HAKUBA 40x70, Swarowski 20 – 60x). We used the males' calling activity to identify and estimate the populations of passerines from the reed beds and woodlands, respectively, the hidden life bird species inside compact vegetation, the crepuscular and nocturne ones. We aimed at estimating the bird populations, too, by counting each bird from the small groups and used a quantitative evaluation in band for the groups or flocks larger than 200 individuals. In the analysis of our results, we are using the SIBLEY & AHLQUIST taxonomic system (1995), as subsequently amended and supplemented (<http://avibase.bsc-eoc.org/>).

RESULTS AND DISCUSSIONS

During the period of our study, we recorded 137 bird species (Table 1) on the territory of the ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers. The mentioned values for the bird population represent the minimum, respectively, the maximum number of counted birds or estimated population during a two-day visit in the whole territory of the reservoir. In this table, we included the complete first list of bird fauna for the hydrographic basin of the Bașeu River, resulting from a study done during 1993 – 2001 (GACHE, 2002), missing the ponds of Ibăneasa, but including the Ichimeni reservoir on Bodeasa, a tributary of the Bașeu River that not is part of the Nature 2000 site. This list includes six species that were not recorded during the present study, and we analysed their absence in the section regarding the trends of bird fauna in the territory.

Table 1. Bird fauna on the territory of the ROSPA0049 Ponds from valley of the Ibăneasa, Bașeu and Podriga Rivers: specific diversity, populations, trends and conservation status.

No.	Species	Breeding season (pairs)	Migration & Pre-wintering time (individuals)	Wintering time (individuals)	Trends	Birds Directive	Romanian Red Book of Vertebrates
1.	<i>Phasianus colchicus</i> Linnaeus 1758	7 - 8	x	3 - 5	0	Annex 2	-
2.	<i>Perdix perdix</i> Linnaeus 1758	12 - 14	x	0 - 11	0	Annex 2	-
3.	<i>Coturnix coturnix</i> Linnaeus 1758	7 - 8	x	-	-1	Annex 2	-
4.	<i>Cygnus olor</i> Linnaeus 1758	3 - 4	49 - 206	0 - 10	0	Annex 2	-
5.	<i>Cygnus cygnus</i> Linnaeus 1758	-	0 - 4	-	+1	Annex 1	-
6.	<i>Anser anser</i> Linnaeus 1758	5 - 7	61 - 318	-	+1	Annex 2	-
7.	<i>Anser albifrons</i> Scopoli 1769	-	58 - 332	-	+1	Annex 2	-
8.	<i>Anas platyrhynchos</i> Linnaeus 1758	15 - 19	653 - 1904	207 - 1400	+1	Annex 2	-
9.	<i>Anas acuta</i> Linnaeus 1758	-	0 - 4	-	0	Annex 2	-
10.	<i>Anas crecca</i> Linnaeus 1758	-	194 - 832	51 - 130	+1	Annex 2	-
11.	<i>Spathula querquedula</i> Linnaeus 1758	2 - 3	21 - 316	-	0	Annex 2	-
12.	<i>Spathula clypeata</i> Linnaeus 1758	-	6 - 156	-	0	Annex 2	-
13.	<i>Mareca strepera</i> Linnaeus 1758	2 - 3	47 - 164	-	+1	Annex 2	-
14.	<i>Mareca penelope</i> Linnaeus 1758	-	29 - 88	0 - 4	-1	Annex 2	-
15.	<i>Tadorna tadorna</i> Pallas 1764	-	0 - 2	-	+1	-	V
16.	<i>Aythya marila</i> Linnaeus 1761	-	0 - 4	-	+1	Annex 2	-
17.	<i>Aythya fuligula</i> Linnaeus 1758	-	-	-	-1	Annex 2	-
18.	<i>Aythya ferina</i> Gldenstdt 1770	3 - 5	23 - 420	-	-1	Annex 2	-
19.	<i>Aythya nyroca</i> Linnaeus 1758	2 - 3	7 - 56	-	-1	Annex 1	V
20.	<i>Phalacrocorax carbo</i> Linnaeus 1758	5 - 7	102 - 226	0 - 59	0	-	-
21.	<i>Microcarbo pygmaeus</i> Pallas 1773	-	-	-	-1	Annex 1	V
22.	<i>Botaurus stellaris</i> Linnaeus 1758	1 - 2	x	-	-1	Annex 1	-
23.	<i>Ixobrychus minutus</i> Linnaeus 1766	10 - 12	1 - 7	-	0	Annex 1	-
24.	<i>Ardeola ralloides</i> Scopoli 1769	2 - 3?	1 - 4	-	0	Annex 1	-
25.	<i>Nycticorax nycticorax</i> Linnaeus 1758	12 - 14	34 - 52	-	0	Annex 1	V
26.	<i>Egretta garzetta</i> Linnaeus 1766	11 - 14	22 - 64	-	+1	Annex 1	E
27.	<i>Ardea alba</i> Linnaeus 1758	7 - 8	38 - 133	0 - 10	+1	Annex 1	E
28.	<i>Ardea cinerea</i> Linnaeus 1758	13 - 16	46 - 132	2 - 9	0	-	-
29.	<i>Ardea purpurea</i> Linnaeus 1766	2 - 3	5 - 8	-	+1	Annex 1	E
30.	<i>Platalea leucorodia</i> Linnaeus 1758	1 - 2?	7 - 12	-	+1	Annex 1	E
31.	<i>Ciconia ciconia</i> Linnaeus 1758	14 - 18	17 - 81	-	0	Annex 1	V
32.	<i>Ciconia nigra</i> Linnaeus 1758	-	0 - 1	-	+1	Annex 1	V
33.	<i>Haliaeetus albicilla</i> Linnaeus 1758	-	0 - 1	-	+1	Annex 1	CE

34.	<i>Aquila heliaca</i> Savigny 1809	-	0 - 1	-	-1	Annex 1	CE
35.	<i>Circaetus gallicus</i> Gmelin 1788	-	0 - 1	-	+1	Annex 1	V
36.	<i>Buteo buteo</i> Linnaeus 1758	-	2 - 8	3 - 6	0	-	-
37.	<i>Buteo lagopus</i> Pontoppidan 1763	-	1 - 3	1 - 2	0	-	-
38.	<i>Pernis apivorus</i> Linnaeus 1758	-	1 - 3	-	0	Annex 1	V
39.	<i>Accipiter gentilis</i> Linnaeus 1758	-	1 - 2	0 - 1	0	-	-
40.	<i>Accipiter nisus</i> Linnaeus 1758	-	1 - 2	-	0	-	-
41.	<i>Circus aeruginosus</i> Linnaeus 1758	5 - 7	7 - 12	-	0	Annex 1	-
42.	<i>Circus cyaneus</i> Linnaeus 1766	-	0 - 3	0 - 1	+1	Annex 1	-
43.	<i>Milvus migrans</i> Boddaert 1783	-	0 - 2	-	+1	Annex 1	CE
44.	<i>Falco subbuteo</i> Linnaeus 1758	1 - 4	0 - 3	-	+1	-	-
45.	<i>Falco tinnunculus</i> Linnaeus 1758	2 - 3	1 - 4	-	0	-	-
46.	<i>Grus grus</i> Linnaeus 1758	-	0 - 1	-	0	Annex 1	V
47.	<i>Crex crex</i> Linnaeus 1758	2 - 4	x	-	-1	Annex 2	-
48.	<i>Gallinula chloropus</i> Linnaeus 1758	9 - 11	x	-	+1	Annex 2	-
49.	<i>Fulica atra</i> Linnaeus 1758	23 - 27	91 - 807	0 - 36	+1	Annex 2	-
50.	<i>Vanellus vanellus</i> Linnaeus 1758	8 - 12	128 - 386	-	0	Annex 2	-
51.	<i>Charadrius dubius</i> Scopoli 1786	2 - 4	2 - 4	-	+1	-	-
52.	<i>Pluvialis squatarola</i> Linnaeus 1758	-	0 - 1	-	0	Annex 2	-
53.	<i>Calidris falcinellus</i> Pontoppidan 1763	-	0 - 20	-	-1	-	-
54.	<i>Calidris pugnax</i> Linnaeus 1758	-	19 - 107	-	+1	Annex 1, Annex 2	-
55.	<i>Calidris ferruginea</i> Pontoppidan 1763	-	-	-	-1	-	-
56.	<i>Calidris alpina</i> Linnaeus 1758	-	4 - 43	-	0	-	-
57.	<i>Calidris alba</i> Pallas 1764	-	0 - 8	-	+1	-	-
58.	<i>Calidris temminckii</i> Leisler 1812	-	1 - 2	-	-1	-	-
59.	<i>Arenaria interpres</i> Linnaeus 1758	-	-	-	-1	-	-
60.	<i>Gallinago gallinago</i> Linnaeus 1758	-	2 - 18	-	0	Annex 2	-
61.	<i>Gallinago media</i> Latham 1787	-	-	-	-1	Annex 1	-
62.	<i>Lymnocyptes minimus</i> Brunnich 1764	-	5 - 6	-	0	Annex 2	-
63.	<i>Numenius arquata</i> Linnaeus 1758	-	-	-	-1	Annex 2	-
64.	<i>Limosa limosa</i> Linnaeus 1758	-	3 - 65	-	0	Annex 2	-
65.	<i>Actitis hypoleucos</i> Linnaeus 1758	-	1 - 4	-	-1	-	-
66.	<i>Tringa ochropus</i> Linnaeus 1758	-	2 - 9	-	-1	-	-
67.	<i>Tringa glareola</i> Linnaeus 1758	-	11 - 52	-	0	Annex 1	-
68.	<i>Tringa nebularia</i> Gunnerus 1767	-	2 - 8	-	0	Annex 2	-
69.	<i>Tringa stagnatilis</i> Bechstein 1803	-	8 - 18	-	+1	-	-
70.	<i>Tringa totanus</i> Linnaeus 1758	-	26 - 72	-	0	Annex 2	-
71.	<i>Tringa erythropus</i> Pallas 1764	-	3 - 7	-	-1	Annex 2	-
72.	<i>Recurvirostra avosetta</i> Linnaeus 1758	-	0 - 1	-	+1	Annex 1	V
73.	<i>Himantopus himantopus</i> Linnaeus 1758	0 - 2?	1 - 12	-	+1	Annex 1	E
74.	<i>Larus cachinnans</i> Pallas 1811	8 - 10	142 - 626	31 - 510	+1	Annex 2	-
75.	<i>Larus canus</i> Linnaeus 1758	-	0 - 2	-	+1	Annex 2	-
76.	<i>Chroicocephalus ridibundus</i> Linnaeus 1766	16 - 18	179 - 692	12 - 109	+1	Annex 2	-
77.	<i>Chlidonias hybrida</i> Pallas 1811	20 - 27	24 - 62	-	0	Annex 1	-
78.	<i>Chlidonias niger</i> Linnaeus 1758	0 - 2?	6 - 10	-	0	Annex 1	-
79.	<i>Sterna hirundo</i> Linnaeus 1758	2 - 4	12 - 33	-	0	Annex 1	-
80.	<i>Podiceps cristatus</i> Linnaeus 1758	6 - 9	8 - 17	0 - 2	0	-	-
81.	<i>Podiceps grisegena</i> Boddaert 1783	-	0 - 2	-	-1	-	-
82.	<i>Tachybaptus ruficollis</i> Pallas 1764	2 - 3	13 - 20	0 - 4	0	-	-
83.	<i>Columba oenas</i> Linnaeus 1758	0 - 2?	0 - 6	-	+1	Annex 2	-
84.	<i>Columba palumbus</i> Linnaeus 1758	5 - 8	8 - 23	0 - 5	+1	Annex 2	-
85.	<i>Streptopelia turtur</i> Linnaeus 1758	2 - 3	3 - 11	-	0	Annex 2	V
86.	<i>Streptopelia decaocto</i> Frivaldszky 1838	7 - 9	5 - 13	-	0	Annex 2	-
87.	<i>Cuculus canorus</i> Linnaeus 1758	18 - 21	x	-	+1	-	-
88.	<i>Athene noctua</i> Scopoli 1769	2 - 3	x	1 - 3	0	-	-
89.	<i>Alcedo atthis</i> Linnaeus 1758	1 - 2?	x	-	0	Annex 1	-
90.	<i>Merops apiaster</i> Linnaeus 1758	17 - 20	36 - 102	-	0	-	-
91.	<i>Upupa epops</i> Linnaeus 1758	2 - 4	3 - 5	-	0	-	V
92.	<i>Picus viridis</i> Linnaeus 1758	1 - 2	x	x	0	-	-
93.	<i>Picus canus</i> Gmelin 1788	0 - 1	x	x	+1	-	-
94.	<i>Dendrocopos major</i> Linnaeus 1758	3 - 4	x	x	+1	-	-
95.	<i>Dendrocopos syriacus</i> Hemprich & Ehrenberg 1833	6 - 7	x	x	+1	Annex 1	-

96.	Oriolus oriolus Linnaeus 1758	3 - 4	x	-	+1	-	-
97.	Lanius collurio Linnaeus 1758	12 - 15	3 - 21	-	0	Annex 1	-
98.	Lanius minor Gmelin 1788	7 - 9	5 - 8	-	0	Annex 1	-
99.	<i>Lanius excubitor</i> Linnaeus 1758	-	2 - 5	1 - 3	0	-	-
100.	Pica pica Linnaeus 1758	4 - 5	6 - 8	4 - 7	0	Annex 2	-
101.	<i>Garrulus glandarius</i> Linnaeus 1758	0 - 1?	1 - 2	1 - 2	0		
102.	Coloeus monedula Linnaeus 1758	7 - 8	6 - 8	2 - 5	0	Annex 2	-
103.	Corvus frugilegus Linnaeus 1758	372 - 397	145 - 346	43 - 200	+1	Annex 2	-
104.	Corvus cornix Linnaeus 1758	3 - 5	14 - 27	9 - 18	0	-	-
105.	Corvus corax Linnaeus 1758	0 - 1?	5 - 35	3 - 21	+1	-	E
106.	Parus major Linnaeus 1758	8 - 10	x	5 - 21	0	-	-
107.	Cyanistes coeruleus Linnaeus 1758	3 - 5	x	4 - 10	0	-	-
108.	Remiz pendulinus Linnaeus 1758	3 - 5	2 - 7	-	0	-	-
109.	Panurus biarmicus Linnaeus 1758	16 - 18	31 - 47	0 - 14	+1	-	-
110.	Galerida cristata Linnaeus 1758	8 - 10	4 - 14	5 - 11	0	-	-
111.	Alauda arvensis Linnaeus 1758	31 - 48	38 - 52	-	0	Annex 2	-
112.	Hirundo rustica Linnaeus 1758	x	326 - 564	-	0	-	-
113.	Delichon urbicum Linnaeus 1758	x	28 - 74	-	0	-	-
114.	Riparia riparia Linnaeus 1758	192 - 240	132 - 470	-	+1	-	-
115.	Phylloscopus collybita Vieillot 1817	3 - 4	x	-	0	-	-
116.	Phylloscopus trochilus Linnaeus 1758	-	x	-	0	-	-
117.	<i>Aegithalos caudatus</i> Linnaeus 1758	-	-	4 - 7	+1	-	-
118.	Locustella luscinioides Savi 1824	8 - 12	x	-	+1	-	-
119.	Acrocephalus scirpaceus Hermann 1804	16 - 21	x	-	+1	-	-
120.	Acrocephalus arundinaceus Linnaeus 1758	71 - 83	x	-	+1	-	-
121.	Acrocephalus schoenobaenus Linnaeus 1758	8 - 11	x	-	+1	-	-
122.	Hippolais icterina Vieillot 1817	1 - 2?	1 - 4	-	0	-	-
123.	Curruca communis Latham 1787	2 - 4	3 - 7	-	+1	-	-
124.	Oenanthe oenanthe Linnaeus 1758	3 - 4	2 - 7	-	+1	-	-
125.	Saxicola rubetra Linnaeus 1758	2 - 3	5 - 11	-	0	-	-
126.	Saxicola rubicola Linnaeus 1766	1 - 2?	3 - 5	-	0	-	-
127.	Sturnus vulgaris Linnaeus 1758	30 - 22	850 - 2354	0 - 12	+1	Annex 2	-
128.	Passer domesticus Linnaeus 1758	52 - 60	72 - 240	18 - 46	0	-	-
129.	Passer montanus Linnaeus 1758	18 - 22	23 - 78	15 - 18	0	-	-
130.	Anthus campestris Linnaeus 1758	14 - 15	12 - 19	-	0	Annex 1	-
131.	Motacilla flava Linnaeus 1758	9 - 12	7 - 33	-	+1	-	-
132.	Motacilla alba Linnaeus 1758	5 - 8	41 - 60	-	+1	-	-
133.	Fringilla coelebs Linnaeus 1758	2 - 3	7 - 11	0 - 3	0	-	-
134.	Fringilla montifringilla Linnaeus 1758	-	12 - 47	8 - 14	0	-	-
135.	<i>Pyrrhula pyrrhula</i> Linnaeus 1758	-	-	0 - 4	+1		
136.	Coccothraustes coccothraustes Linnaeus 1758	0 - 1	2 - 7	2 - 5	0	-	-
137.	Spinus spinus Linnaeus 1758	-	6 - 13	8 - 21	0	-	-
138.	Chloris chloris Linnaeus 1758	7 - 8	5 - 11	-	0	-	-
139.	Carduelis carduelis Linnaeus 1758	12 - 14	27 - 61	12 - 34	+1	-	-
140.	Linaria cannabina Linnaeus 1758	4 - 5	5 - 17	0 - 3	0	-	-
141.	Emberiza calandra Linnaeus 1758	17 - 21	16 - 42	0 - 5	+1	-	-
142.	Emberiza schoeniclus Linnaeus 1758	11 - 13	11 - 27	5 - 7	+1	-	-
143.	Emberiza citrinella Linnaeus 1758	1 - 2	2 - 7	5 - 11	0	-	-

Legend: bolded name species – recorded by Gache during 1993 - 2001; ? – possible breeding species; x – non-estimated population; Trends: +1 – positive trend, 0 – constant trend; -1 – negative trend; *Romanian Red Book of Vertebrates*: CE – critically endangered species, E – endangered species, V – vulnerable species.

As we can see in table 1, the bird species typical or related to the aquatic ecosystems and wetlands present high diversity on the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers (58.45% from the recorded bird fauna) due to the large surfaces covered by open waters, reed beds and marshes inside the area. The woodland bird species appear in this list, especially as species searching for food around the shrubs, grasslands, and cultivated lands, even wetlands, the forest ecosystem covering small areas in the Natura 2000 site. The passerines represent 33.80% of the recorded bird species in the investigated perimeter. Most of them are bird species for open lands with shrubs and bushes, following the opportunistic bird species, which are present inside the anthropogenic ecosystems and eleven passerine species are typical or related to the aquatic ecosystems.

The Bașeu River and its principal tributaries, Podriga and Bodeasa, cross a significant part of the Botoșani County territory. The natural debit in the hydrographic basin of the Bașeu River presents large oscillations, which expose its perimeter to high-level flooding phases and severe drought periods with the complete absence of the water resources. The valleys of all these rivers, but also those from the Jijia River basin (Ibăneasa, Sitna) in the south-western side of Botoșani, were the subject of an extensive programme of hydro-technical arrangements implemented starting from the middle '70s until the early '90s. As a result, various reservoirs and a network of ponds appeared in the area, following the control of flooding risk for the local communities and the supply of water resources for agriculture and fisheries.

The appearance of these new aquatic ecosystems along the courses of the Bașeu River and its tributaries changed the bird species diversity and the dynamic of the bird fauna in the area. Over time, the birds' diversity increased in the perimeter of these ponds and reservoirs that became stopover points during migration time for a significant number of waterfowls and waders. In the middle '90s, the open waters with various depths represented the typical habitat for these aquatic surfaces. The marshes habitat covered large sectors along the valley of the Bașeu River - for example, between the Vlăsinești and Sârbi villages, in the northern sector of the Hănești Lake. The reed beds were present as strips along the edge of the ponds in some areas (the Havârna ponds) or forming compact islands of reed in the middle sector or compact reed beds on the tail perimeter of some reservoirs (the Ichimeni reservoir and the Hănești Lake). The habitat of the meadow forest was present only in the perimeter of the Hănești Lake. During the last decade of the 20th century, the bird fauna list for the hydrographic basin of Bașeu River included 117 bird species, with the aquatic and semiaquatic groups presenting a high diversity (GACHE, 2002). Numerous bird species related to the aquatic and wetlands' habitats were present with flocks of dozens and hundreds to thousands of individuals especially during autumn migration, but presented small breeding populations. The perimeter of the Hănești Lake and ponds, respectively the Havârna ponds represented the significant breeding territories in the basin of the Bașeu River.

The absence of forests on the slopes surrounding the valleys, some agricultural practices in the vicinity of the aquatic surfaces, long periods of severe drought and the torrential rainfalls in the global climate changes dynamic in this region represent cumulative factors, which increase the risk of silting for the ponds and reservoirs. The ponds and some reservoirs present a very high dynamic of the habitats, as water evolves from an oligotrophic status to a eutrophic one and decreases in depth, the reed beds extend, and marsh areas become grasslands. During the last two decades, the reed beds covered large surfaces in the middle sector of the Havârna ponds and extended to 33% of the whole surface of the Vorniceni ponds and the Hănești Lake. The former marsh areas disappeared, replaced by grasslands with thin reed growing here and there - for example, the eastern sector of the Vorniceni ponds and the large swampy surface from the northern edge of Hănești Lake to the limit of Vlăsinești village. The diversity of the bird fauna increased compared to the previous studies (GACHE, 2002; GACHE et al., 2002); we recorded 25 new bird species for the investigated perimeter during the present study. We met some of them only once or twice during the migration time - for example, *Grus grus* (Hănești Lake, 31.03.2007), *Aquila heliaca* (Hănești Lake, 19.04.2003 and Ibăneasa ponds, 10.04.2013), *Circaetus gallicus* (Hănești Lake, 11.08.2003), *Pluvialis squatarola* (Hudești ponds, 20.08.2004), and *Ciconia nigra* (Mileanca, 19.10.20019). We relate the appearance of the white-tailed eagle (*Haliaeetus albicilla*) in this territory with the presence of one breeding pair on the left side of the Prut River in vicinity of Stâncă - Costești reservoir. We observed it as a subadult bird caught fishing in the perimeter of Hănești Lake, in February 2022 or as an immature bird met in the perimeter of Hudești ponds, in early June 2021. Other species became a constant presence in the area as a result of the appearance of suitable habitats - for example, the purple heron (*Ardea purpurea*) that needs large compact reed beds or as result of a natural extension of their breeding territory - for example, the common wood pigeon (*Columba palumbus*). Two bird species (*Cygnus cygnus* and *Circus cyaneus*) appeared as wintering visitors or autumn passage species in this perimeter ten years ago being regular presence now.

During the breeding season, 83 bird species have regular breeding, while other 10 bird species could be at least irregular or probably breeding species in the perimeter of the ROSPA0049 Ponds from the valley of the Ibăneasa - Bașeu - Podriga Rivers. The breeding bird populations of waterfowls, herons and egrets could be slightly larger than estimated because we counted the individuals feeding in the large open waters outside compact reed beds or staying on the trees (for the herons). We assess that the central part, including the island and the tail area of the Hănești Lake, the middle and the southern sector of the Havârna ponds and the middle western sector of the Vorniceni ponds - covered by suitable habitats for the bird fauna - represent the principal shelters for the breeding species. In terms of sensitivity to the anthropogenic presence, we recorded the breeding presence of the greylag goose (*Anser anser*) in the perimeter of the Hănești Lake starting from the spring of 2019. The grebes (*Podiceps cristatus* and *Tachybaptus ruficollis*) and the terns (*Chlidonias hybrida* and *Sterna hirundo*) are building their nests on the submerged plants in the perimeter of the Vorniceni ponds and the Hănești ponds.

In the early beginning of the first decade of the 2000s, the fishery administration decided to cut some willows sheltering nests of cormorants on the island from the Hănești Lake. Some pairs of egrets and herons left this breeding perimeter together with the cormorants, so their breeding population decreased in this area (2002 - 2003). Starting from the spring of 2004, the cormorants (*Phalacrocorax carbo*), the herons and egrets (*Nycticorax nycticorax*, *Egretta garzetta*, *Ardea alba* and *A. cinerea*) and the rook (*Corvus frugilegus*) share the trees of the island from the Hănești Lake. The cormorants and rooks use the trees from the southern side, while the herons have the nests in the trees from the northern and north-western edges of the island. Starting with the 2019 breeding season, we observed a slight

increase in the nesting pairs from the perimeter of the Hănești Lake, with the egrets and herons establishing their colonies on the small clumps of willows surrounded by compact reed beds in the south-western side of the lake. The egrets and herons are nesting in the compact reed beds from the central and southern sectors of the Havârna ponds, adults and juvenile birds appearing there in the early summer. The spoonbill (*Platalea leucorodia*) could nest in the perimeter of the Havârna ponds; we met adult birds with nuptial plumages feeding in this perimeter and on the Mileanca reservoir during the breeding period (2020 – 2022). As breeding passerine species, we notice the presence of the tawny pipit (*Anthus campestris*) and shrikes (*Lanius collurio*, *L. minor*), building their nests on the dry grasslands with shrubs from the territory of the Natura 2000 site. We mention the significant colonies of sand martin (*Riparia riparia*) in the perimeter of the eastern bank of Hănești Lake and in the western bank of Calu Alb Reservoir.

We notice some differences comparing our recorded data regarding the breeding population with the official standard form of the ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers. We assess the presence of much bigger populations of the egrets and heron species that appear in the official document. Meanwhile, we assume that the present surfaces covered by suitable habitats cannot sustain the mentioned breeding population for the passerine bird species on the territory of Natura 2000 site.

During the migration time (March – first decade of May for spring migration, respectively, middle August – middle November for autumn migration) we met 135 bird species inside the perimeter of the ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers. In a field visit of the two-day monitoring activity, covering the entire territory of the Natura 2000 site during the migration time, we counted thousands of individuals for the aquatic and semi-aquatic bird species population – up to 6500 individuals.

For the semi-aquatic 37 bird species such as egrets, herons, spoonbill, storks and waders, we recorded passing populations of ten individuals, the only three exceptions being the great egret (*Ardea alba*), grey heron (*A. cinerea*), ruff (*Calidris pugnax*) and lapwing (*Vanellus vanellus*), present with flocks of hundred individuals. The suitable habitats for the waders as the swampy areas, shallow waters or the islands and stripes of pebble, sand and clay, which appear temporarily, lost large surfaces in this area during the last two decades. This phenomenon explains the small flocks of waders recorded during our study in the investigated perimeter and the complete absence of four species (*Calidris ferruginea*, *Arenaria interpres*, *Galinago media* and *Numenius arquata*) comparing with three decades ago (GACHE, 2002; GACHE et al., 2002). Moreover, we consider the quantitative data presented in the official standard form like overestimated for most semi-aquatic bird species. Nowadays, negative trends are characteristic of this ecological group of birds.

Typical aquatic bird species present a high diversity during the migration period (26 bird species) and appear with flocks of tens or hundreds of individuals on the territory of the ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers. Anseriformes are dominant in terms of diversity (16 species) and populations - we recorded up to 4700 individuals of swans, geese and ducks during a visit of two days for bird monitoring in the territory of the Natura 2000 site. The mallard (*Anas platyrhynchos*) is the only species recorded with thousand individuals during one field trip in the migration time. There are some species appearing in flocks of hundreds of individuals in the migration period: the geese species (*Anser anser* and *A. albifrons*) and the dabbling duck species (*Anas crecca*, *Spathula querquedula*, *Mareca strepera* and *Spathula clypeata*). The diving duck species (*Aythya* sp.) present negative trends during the last years when the depth of the aquatic surfaces decreased due to the severe drought phenomenon; we have not met the tufted duck (*Aythya fuligula*) during the present study.

Only the cormorant (*Phalacrocorax carbo*) is a constant passage presence in the area, while we have not met the pygmy cormorant (*Microcarbo pygmaeus*) during the last two decades, the last recording being of 38 individuals on the 26th June 2002 at the Hănești Lake. During the autumn migration, we counted more than 800 coots (*Fulica atra*) in the investigated territory. Regarding the gull species, only the Caspian gull (*Larus cachinnans*) and the black-headed gull (*Chroicocephalus ridibundus*) present significant passage population in the area, appearing in flocks of hundreds of individuals, and we recorded tens of individuals of tern species (*Sterna hirundo* and *Chlidonias* sp.) as a constant presence during the migration period.

The wintering time bird fauna is not rich on the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers – we observed only 49 bird species during this period of the year. Aquatic surfaces are usually freezing in late December or early January. We observed aquatic bird species only in the perimeter of the Hănești Lake - some anseriformes (*Cygnus olor*, *Anas platyrhynchos*, *Anas crecca*, *Mareca penelope*), the coot (*Fulica atra*) and the gulls (*Larus cachinnans* and *Chroicocephalus ridibundus*). We recorded tens to hundreds of individuals as wintering populations for these species.

We explain the absence of the diver species (*Gavia arctica* and *Gavia stellata*) and of the smew (*Mergellus albellus*) in our list through the unsuitable depth of the aquatic surfaces in the basin of the Bașeu River. The two diver species appear as wintering vagrant and the smew is a winter visitor only in the perimeter of the Stânca-Costești reservoir in the area (GACHE, 2002). For this reason, we consider their inclusion in the official standard form of the Natura 2000 site to be inappropriate.

The great egret (*Ardea alba*) and grey heron (*A. cinerea*) are present in the area until the second decade of December. We met solitary individuals or small flocks of common wood pigeon (*Columba palumbus*) during the whole cold season, despite its status of summer visitor in our country. We mention only a few species – *Buteo lagopus*, *Circus cyaneus*, *Lanius excubitor*, *Aegithalos caudatus* and *Pyrhula pyrrhula* – as typical winter visitors for this perimeter.

In the list of bird fauna identified during our monitoring activity on the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers, 34 bird species appear in Annex 1 to the Birds Directive (2009/147/EC). For these bird species, special conservation measures must be implemented concerning their habitats in order to ensure their survival and the reproduction in their distribution range. Analysing the official standard form of the site, 18 recorded bird species do not appear in this document. Some of them are rare species in the area; for example, we met the black stork (*Ciconia nigra*), the common crane (*Grus grus*), the eastern imperial eagle (*Aquila heliaca*), the short-toed eagle (*Circaetus gallicus*), the black kite (*Milvus migrans*) or the avocet (*Recurvirostra avosetta*) as solitary birds during the migration period. Other species, as the whooper swan (*Cygnus cygnus*), the rough-legged buzzard (*Buteo lagopus*) and the hen harrier (*C. cyaneus*), appeared constantly in the migration and wintering period. The white-tailed eagle (*Haliaeetus albicilla*) seems to use the valley of the Bașeu River as its feeding territory. We notice the presence of some bird species included in the Annex 1 to the Birds Directive but not mentioned in the official standard form of the site, as they were certain and probably breeding bird species in the area: *Himantopus himantopus*, *Dendrocopos syriacus* and *Lanius collurio*.

During our field research activity, we also met 41 bird species included in Annex 2 to the Birds Directive (2009/147/EC) as hunting species under the national laws without jeopardising conservation efforts in their distribution area; 24 of them are not present in the official standard form of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers. Most of them represent waterfowl species (Anseriformes), wader species (Charadriiformes), doves (Columbiformes) and passerine species (Passeriformes).

On the territory of this Natura 2000 site, we identified 21 bird species included in the Red Book of Vertebrates from Romania (BOTNARIUC & TATOLE, 2005). Three of them are critically endangered bird species, all being raptor species: the white-tailed eagle (*Haliaeetus albicilla*), the eastern imperial eagle (*Aquila heliaca*) and the black kite (*Milvus migrans*). Six other are endangered species, five of them being nesting species in this territory as certain breeding species (*Egretta garzetta*, *Ardea alba* and *A. purpurea*) or possible breeding species (*Platalea leucorodia* and *Himantopus himantopus*). The last one is the raven (*Corvus corax*), which is a sedentary bird in the region, presenting a positive trend in the basin of the Bașeu River. The group of vulnerable species present a higher diversity, with 12 species, but there was one we have not met during our study: the pygmy cormorant (*Microcarbo pygmaeus*). Six vulnerable species appear only during the migration time in this perimeter (*Tadorna tadorna*, *Ciconia nigra*, *Circaetus gallicus*, *Pernis apivorus*, *Grus grus* and *Recurvirostra avosetta*), while five other species are breeding bird species in the area (*Aythya nyroca*, *Nycticorax nycticorax*, *Ciconia ciconia*, *Streptopelia turtur* and *Upupa epops*).

We have identified various natural and anthropogenic factors that can influence the birds' presence on the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers. In the context of global climate changes, water resources become the principal problem in this territory. Nowadays, the silting phenomenon presents low values inside the ponds and reservoirs, but the impact of long periods of severe drought is significant for aquatic ecosystems and wetlands. Water depth decreased everywhere in the basin of the Bașeu River. The reduced depth of the water and the high temperatures in summer favour the phenomenon of harmful water bloom – the excessive development of the algal and submerged vegetation. We observed it in the perimeter of the Vorniceni ponds. During the last two years of our study, large surfaces were dry – for example, the waters covered only 33 to 45% of the perimeter of the Calu Alb and Mileanca reservoirs. The high oscillations of the water level favour the extension of reed beds. Large marsh areas disappeared along the valleys of the Ibăneasa and Bașeu Rivers due to repeated episodes of severe drought – for example, the swampy and temporarily flooding meadow between the Vlăsinești and Sârbi villages or the eastern sector of the Vorniceni ponds. The local communities use the resulting grasslands for grazing cattle, sheep and goats.

Fishery represents an anthropogenic activity with a significant impact on the bird fauna from the territory of the Natura 2000 site. On the one hand, fish farmer administrations try to identify the best ways to avoid or reduce fish-eating bird species, especially cormorants. For example, they installed various devices that produce sounds similar to gunshots from time to time and used the boats moving on the ponds' surfaces in the perimeter of the Havârna ponds or they cut the trees where the cormorants built their nests on the island from the Hănești Lake. During the late autumn of 2021, we observed works of unclogging the ponds' basin and the minor bed of the Bașeu River inside the fishery from Havârna. In the perimeter of these fisheries, the administration left the small ponds dry, giving up the growing of fish alevins faced with the challenge of lack of water during the years 2021 and 2022. The seasonal changes in the water level and surface, as regular practices inside the fisheries, offer suitable habitats for the feeding of various bird species and even to nest, increasing the birds' diversity in the area. During our study, we met significant activity of sport fishing, especially along the eastern side and the dam of the Hănești Lake, respectively, along the southern bank and the dam of the Vorniceni ponds. We found various points with abandoned waste and improvised open fire sites in the perimeter of the Hănești Lake. We mention that we recorded no hunting games activity in the perimeter of the Natura 2000 site during our monitoring activity in the area.

Another risk factor for biodiversity in the hydrographic basin of the Bașeu River is the new practice of incineration of the stubble at the end of harvesting; uncontrolled fire may spread to wild vegetation, including the reed beds and the meadow forest. We met this situation in the perimeter of the Hudești ponds and the Calu Alb Reservoir.

CONCLUSIONS

Our collected data regarding the bird fauna on the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers proves the ornithological significance of this area during migration and in the breeding season, sheltering small breeding populations, but hundreds to thousands of waterfowls and tens waders on its territory. During mild winters, this perimeter becomes a wintering territory, which shelters tens and hundreds to thousands of aquatic bird species.

During our study, we recorded 137 bird species in the investigated territory, but the list of bird fauna includes 143 species. Compared to the data from previous ornithological studies in the area, we notice an increase of more than 22% in the diversity of the bird fauna; we met 26 bird species unmentioned before for this territory. We mention that we took no account of the three bird species mentioned in the official standard form of the site, but their suitable habitat is missing there, respectively, *Mergellus albellus*, *Gavia arctica* and *G. stellata*. The official documents of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers mention the presence and estimated population of 40 bird species.

We assess that 70 identified bird species present a constant trend, and other 54 species form the group with positive trends in this area, presenting a slight increase in population during the annual biological cycle. We recorded 19 bird species with negative trends in the perimeter of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers; we have not met six of them during our study. The waders represent the group with the highest diversity (9 species), recording negative trends in the area; four of the missing species are waders. Among the aquatic bird species, the diving ducks present negative trends, and we did not record the presence of the tufted duck (*Aythya fuligula*) during the six years of study. We notice the disappearance of the pygmy cormorant (*Microcarbo pygmaeus*) during the last decade in this territory. The management plan approved for the site offered general data regarding the presence of 40 bird species and the status of their frequency on the Natura 2000 site, but without quantitative data for the protected natural area.

A mosaic of various suitable habitats for different bird species covers the territory of this Natura 2000 site, representing a shelter for 83 bird species as regular breeding, and ten others could be irregular or at least probably breeding species, which means a specific diversity of nesting bird fauna increasing compared to previous data (including the official standard form). The breeding populations are small but present a positive trend compared to three decades ago, due to the habitats' evolution under the pressure of various episodes of severe drought recorded in the area, including the compact reed beds extension and the development of small meadow forest surfaces.

The hydrographic basin of the Bașeu River is part of the Prut River basin, which overlaps with significant bird flyways in Eastern Romania. The designation of the ROSPA0049 Ponds from the valley of Ibăneasa – Bașeu – Podriga Rivers followed the conservation of an important stopover territory for aquatic and semi-aquatic bird species. We recorded the highest diversity of bird fauna (135 bird species) and the highest bird populations during the migration time in the perimeter of natural protected area. We counted up to 6500 individuals representing the aquatic and semi-aquatic bird species in the area during the migration time, the recorded bird population being lower than it appears in the official standard form for most of species. We assess that the disappearance of large marsh areas represents the principal factor for the diminution of the waders' population in the area. The group of dabbling ducks is dominant through diversity and population, while we have recorded low values of these two parameters for the aquatic bird species that are diving to feed. We notice the specific diversity of raptor birds, despite the small populations appearing in a passage on the territory of this Natura 2000 site.

The territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers is not significant as a wintering area for the aquatic birds in north-eastern Romania. The waterfowls form large concentrations in the perimeter of the Stâncă-Costești Reservoir, located in the neighbourhood of the natural protected area. The diversity and the size of waterfowl wintering populations on the territory of the Bașeu River basin are higher during the mild winters when the perimeter of the Hănești Lake is not freezing. The ice-bed covers all other ponds and reservoirs no later than the first decade of January.

We have identified 34 bird species nominated in Annex 1 to the Birds Directive, and 18 species do not appear in the official standard form of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers. Most of them represent passage species during the seasonal migration time, and one of them became a constant presence in the area during the last years, this perimeter serving as feeding or even breeding territory. The list of bird fauna for the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers included three critically endangered species, six endangered bird species and twelve vulnerable bird species that appear in the Red Book of Vertebrates from Romania. Out of these, 12 species appear in Annex 1 of the Birds Directive, too. We met 41 bird species included in Annex 2 of the same directive, but only 17 of them mentioned in the official document of the site.

We identified the changes in aquatic surfaces in terms of depth and width as the main threatening factors for the bird fauna on the territory of the ROSPA0049 Ponds from the valley of the Ibăneasa – Bașeu – Podriga Rivers. The aquatic and wetland habitats changed under the severe drought recorded during many of the last ten years in this part of Romania, losing open water and marsh surfaces. The impact of the changes is significant for the diversity and population of the bird fauna on the territory of the natural protected area. The perimeter of the fisheries from the Hudești ponds and the Hănești Lake shelter the higher bird diversity and population during every period from the annual biological cycle, while the territory of the Calu Alb and Mileanca reservoirs is significant during the migration time.

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