AVIFAUNA OF NATURA 2000 "GRUIA - GÂRLA MARE" WINTER-SPRING

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Abstract. *This paper presents observations on avifauna in the "Gruia – Gârla Mare" Special Bird Protection Area (ROSPA0046) collected during winter and spring. Data complete information published in the first part of the study AVIFAUNA OF NATURA 2000 "GRUIA – GÂRLA MARE" SUMMER FALL (Birău et al., 2017) to provide a general view of SPA avifauna with a complete list of bird species during one year. Thus, 50 more bird species join the 111 bird species already observed in the first part of the study. The methods used in the inventory and mapping of bird species are full counting of water bird species, counting from observation points, and transects. The list of bird species observed is of importance given that there is no complete inventory of bird species for this protected area constantly made during an entire year. Information contain data that can be used in establishing the avifauna biodiversity of the area, bird species dynamics and populations depending on season, and it is the basis for future research of migration periods and of climate change on bird species, the importance of conserving habitats and maintaining populations, and the importance of bird species groups for natural and demi-natural ecosystems of the protected area.*

Keywords**:** *avifauna, Gruia - Gârla Mare, Natura 2000 site*

INTRODUCTION

Change, as a result of natural, social, economic, and political environments, occurs in most natural resource management situations on Earth (JAYALAXSHMI *ET AL*., 2008). To be aware of and understand the way change occurs, we need ecosystems to be monitored through techniques adapted to its needs.

This paper aims at documenting a less studied area (BIRĂU *ET AL*., 2017) because past studies in south Romania focused on other destinations – the lake complex at Rast-Bistreț (TĂLPEANU, 1963), Ilfov (PAPADOPOL, 1989) – or areas from east Romanian Plain – attracted by the large number of birds using these areas during fall and spring migration to feed and rest (PETRESCU, 2002). The main ornithologists having studied the avifauna of Oltenia are CĂTUNEANU (1985), PAPADOPOL (1982, 1984, 1986), TĂLPEANU (1963, 1965, 1972), AND PASPALEVA (1972).

MATERIALS AND METHOD

The study was carried out over 10 months from October 1 2017 to July 1, 2018. We used three working methods:

- Numbering water bird species – this method was successfully used in the complex of water basins at the fishery at Gârla Mare, on the bank of the Danube River, in the vicinity of Vrata, Gârla Mare, Pristol, and Gruia, but it was less accurate because of the large areas covered by reeds at Balta Vrata and Balta Gruia;

- Numbering from observation points – this technique was used particularly for raptors and storks: we chose as observation points three different areas in the open area, in the field of Vrata, near the island of Gârla Mare, and on the pasture at Pristol;
- Transects in singing birds – in the forest at Vrata - Gârla Mare, in willow and poplar thrushes, and in crop areas from adjacent localities.

Observations were facilitated by the use off an equipment made up of determiners (Collins), MONARCH 5 10x42 binoculars and a Canon 70D camera with a sigma 150-600 mm Contemporany objective, with which we could take photos to confirm part of the bird species; the photos and important data were uploaded into myBiosis.info and openbirdmaps.ro databases.

RESULTS AND DISCUSSIONS

During the research, we recorded 50 new bird species, most of which are winter guests or transitory bird species.

The moist area, particularly the lakes where there is no fishing, such as the two lakes near the forest of Gârla-Mare, have been resting and feeding places during winter for a large number of water bird species such as these ones observed in a single day: *Ardea alba* - 56, *Ardea cinerea* - 70, *Cygnus columbianus bewickii* - 43, *Cygnus cygnus* - 20, *Cygnus olor* - 40, *Larus ridibundus* - 440, *Aythya ferina* - 80, *Aythya fuligula* - 40, *Anas penelope* - 150, *Spatula clypeata* - 40, *Anas acuta* - 20, *Anas platyrhinchos* - 230, and *Fulica atra* - 600.

According to our data, we may assume that the number of birds is increasing because of the high level of precipitations favouring new food sources and nesting (the recovery, at Gârla Mare, of a mixed colony of *Egretta garzetta*, *Ardeola ralloides*, *Ardea cinerea*, *Ardea purpurea*, *Nyctycorax nyctycorax*, *Platalea leucorodia*, *Plegadis falcinellus*, and *Microcarbo pygmeus*). This increasing trend peaked during spring migration with a similar number of water birds; here is the largest number of birds in a single day on the SPA area: *Platalea leucorodia* - 30, *Aytya nyroca* - 50, *Egretta garzetta* - 68, *Himantopus himantopus* - 24, *Nyctycorax nyctycorax* - 25, *Ciconia nigra* – 80, and *Aquila pomarina* - 7.

The 50 new bird species recorded are grouped per order, in the tables below. For the most representative bird species, we supply other details as well.

Table 1a.

List of bird species identified within the protected area Gruia – Gârla Mare in the second part of the study

Orders *Podicipediformes*, *Pelecaniformes*, *Ciconiiformes* and *Anseriformes*

No.	Species Code	Species	Locality
1	A019	*Pelecanus onocrotalus*	G.
2	A020	*Pelecanus crispus*	G.
3	A037	*Cygnus columbianus bewickii*	GM.
4	A038	*Cygnus cygnus*	GM., P., G.
5	A041	*Anser albifrons*	GM.
6	A050	*Anas penelope*	V., GM., P., G.
7	A054	*Anas acuta*	GM.,G.
8	A056	*Spatula clypeata*	GM.
9	A059	*Aythya ferina*	GM., P., G.
10	A061	*Aythya fuligula*	GM., P., G.
11	A068	*Mergellus albellus*	G.
12	A070	*Mergus merganser*	G.
Place: V - Vrata, GM - Gârla Mare, P - Pristol, G - Gruia			

Order *Anseriformes*, Family *Anatidaes*

Cygnus columbianus bewickii (Bewick's swan)
Bewick's swans are among the largest long-distance migratory birds (HEDENSTRÖM & ALERSTAM, 1998). The lakes at the fishery of Gârla Mare were resting places for adults and young in the first half of the year. During migration, these swans stop several times to feed and, in spring, they store fat for reproduction (BEEKMAN *ET AL*., 2002; NOLET, 2006). Thus, the area becomes more important since the swans depend on deep waters to feed on water vegetation (BEEKMAN *ET AL*., 1991; NOLET & DRENT 1998; NOLET *ET AL*., 2001; HOYE *ET AL*., 2012) that contain high calorie supplies (KLAASSEN *ET AL*., 2010); on the nenuphar lake near the forest, 43 birds stationed during the week January 1-8, 2018, of which 10 were young.

Anas penelope (Eurasian widgeon)
Perturbation by predators, including hunting practices, undoubtedly play an important role in the selection of feeding places (OWEN & WILLIAMS, 1976). Thus, the bird species can be seen in the quiet spots at Vrata, on large water areas at Gârla – Mare, being a bioindicator for hunting damage (PAILLISSON *ET AL*., 2002). Once the lakes freeze, they go to the Danube. It is a winter guest at Gruia – Garla Mare (our own observations).

Table 1b.

List of bird species identified in the protected area Gruia – Gârla Mare in the second part of the study

Orders *Accipitriformes, Falconiformes* and *Charadriiformes*

No.	Species Code	Species	Locality
13	A082	*Circus cyaneus*	V., GM., P., G.
14	A083	*Circus macrourus*	G.
15	A084	*Circus pygargus*	V., GM.
16	A088	*Buteo lagopus*	V., GM., P., G.
17	A089	*Aquila pomarina*	G.
18	A094	*Pandion haliaetus*	GM., G.
19	A098	*Falco columbarius*	V.
20	A103	*Falco peregrinus*	V.
21	A133	*Burhinus oedicnemus*	GM.
22	A140	*Pluvialis apicaria*	V.
23	A147	*Calidris feruginea*	G.
24	A164	*Tringa erythropus*	GM., G.
25	A165	*Tringa ochropus*	GM., G.
26	A168	*Actitis hypoleucos*	GM., G.
27	A459	*Larus cachinnans*	GM.
28	A614	*Limosa limosa*	GM., G.
29	A672	*Calidris minuta*	G.
Place: V - Vrata, GM - Gârla Mare, P - Pristol, G – Gruia			

Order *Accipitriformes*, Family *Accipitridae*

Circus cyaneus (hen harrier)
According to our observations, the hen harrier's presence in the area is visible at the debut of the migration period and it peaks during winter months. Changes in agricultural practices (that have already reduced biodiversity – such as granivore birds or small mammals) can affect the

bird species hunted on agricultural lands (AMAR & REDPATH, 2005). Feeding is specific: they search the area flying at different heights and changing direction frequently, active and unpredictable flight often ending in surprise attacks.

Circus pygargus (Montagu's harrier)
Montagu's harrier is a bird species migrating over long distances; it reproduces in Europe and Asia and it prefers Africa, the Indian sub-continent, and Sri Lanka for hibernation (CLARKE, 1996). It was observed in the summer of 2016 (by TITIANA OACHEȘ) close to Vrata, where we also found a female at the beginning of May 2018.

Order *Falconiformes*, Family *Falconidae*

Falco columbarius (merlin)
It can be seen in the area during winter. *Falco columbarius* prefers bird prays in open and semi-open habitats (FERNÁNDEZ-BELLON & LUSBY, 2011). The number of birds wintering during our study period was low, its frequency was also low, and we noted a single individual in the agricultural area near Vrata.

Table 1c.

List of bird species identified in the protected area Gruia – Gârla Mare in the second part of the study

Orders *Passeriformes* and *Piciformes*

No.	Species Code	Species	Locality
30	A224	*Caprimulgus europaeus*	V.
31	A236	*Dryocopus martius*	V., GM.
32	A231	*Garrulus glandularis*	V., GM.
33	A237	*Dendrocopos major*	V., GM., P., G.
34	A238	*Dendrocopos medius*	V.
35	A243	*Calandrella brachydactyla*	V.
36	A255	*Anthus campestris*	V., GM., P., G.
37	A259	*Anthus spinoletta*	GM.
38	A265	*Troglodytes troglodytes*	V., GM., P., G.
39	A276	*Saxicola torquata*	GM.
40	A284	*Turdus pilaris*	V., GM., P., G.
41	A285	*Turdus philomelos*	V.,G.,P.,G.
42	A311	*Sylvia atricapilla*	V., GM., G.
43	A317	*Regulus regulus*	V.
44	A323	*Panurus biarmicus*	V., GM., P., G.
45	A334	*Certhia familiaris*	V., GM., P., G.
46	A340	*Lanius excubitor*	V., GM., P.
47	A355	*Passer hispaniolensis*	V.
48	A360	*Fringilla montifringilla*	V.
49	A366	*Linaria cannabina*	V., GM., P., G.
50	A429	*Dendrocopos syriacus*	V., GM.
Place: V - Vrata, GM - Gârla Mare, P - Pristol, G – Gruia			

Orders *Passeriformes* and *Piciformes*

Passer hispaniolensis (Spanish sparrow)
The Spanish sparrow is a bird species of the south-west Palaearctic with up to two laying of eggs per year (CRAMP & PERRINS, 1994). We spotted a colony in the fall of 2017 that has been there in 2018 also. The colony numbers about 40 nests and it is located in an oak also hosting a nest used by a pair of long-legged buzzards (*Buteo rufinus*). The presence of the Spanish sparrow and its extension in south Romania has been studied since the last century (RADU, 1973).

Linaria cannabina (common linnet)
It is a social bird species that occurs during winters we spotted both flocks made up only of individuals of the same bird species – up to 50 birds, as well as mixed flocks of goldfinch, yellowhammer, and greenfinch. During hard winters with snow and blizzards, they occur frequently near and in localities (observations made in January 2018). The tendency to associate maintains during nesting when they nest at relatively short distances making up semi-colonies (NEWTON, 1972). The nest is built exclusively by the female (Newton, 1972) in quiet areas with shrubs and short, according to our observations.

Dryocopus martius (black woodpecker)
The bird species occurs accidentally, particularly during winter. It prefers quiet areas with no forestry and old trees (VOOUS, 1947), the best place being Ostrovul Gârla Mare. On the other hand, black woodpecker does not hesitate to penetrate areas that were deforested recently, taking advantage of the food sources there are authors debating this behaviour (GARMENDIA *ET AL*., 2006).

CONCLUSIONS

This paper presents observations on avifauna in the "Gruia – Gârla Mare" Special Bird Protection Area (ROSPA0046) collected during winter and spring. Data complete information published in the first part of the study AVIFAUNA OF NATURA 2000 "GRUIA – GÂRLA MARE" SUMMER FALL (BIRĂU *ET AL*., 2017) to provide a general view of SPA avifauna with a complete list of species during one year. Thus, 50 more species join the 111 species already observed in the first part of the study.

During the period mentioned, we observed an increasing number of birds in 2017, a phenomenon caused by the high level of precipitations favouring new sources of food and nesting opportunities. This trend peaked during spring migration.

The newly inventoried bird species are grouped into 9 taxonomic orders. Among special bird species met during the study are *Cygnus columbianus bewickii*, *Anas penelope*, *Circus cyaneus*, *Circus pygargus*, *Falco columbarius*, *Passer hispaniolensis*, *Linaria cannabina*, and *Dryocopus martius.* Complete inventory of bird species during an entire year provides useful information for this area that has not been studied enough.

Burhinus oedicnemus (Eurasian stone curlew)

Pandion haliaetus (osprey)

Circus macrourus (pale harrier), young male

Dendrocopos syriacus (Syrian woodpecker)

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