

OVERALL ANALYSIS OF NATURE 2000 SITE ON AVIFAUNA ROSPA0137 PĂDUREA RADOMIR

RIDICHE Mirela Sabina, MATEESCU Monica Daniela, VIȘAN Corina Lelia

Abstract. The study presents the results of the avifaunistic investigations carried out on the site ROSPA0137 Pădurea Radomir in April-July 2010 and January-August 2014. After a brief overview of the geomorphological and hydrographic characteristics of the area and the biotope types of the site's perimeter, we bring new data of the avifaunistic diversity and numerical estimations of the populations of bird species nesting in the site or stationing during spring-autumn migration. The avifauna also includes bird species transiting the site. Since many species of birds found in the protected area are part of the European conservation interest, for each we have presented a protection status established by national and European legislation. The survey data can be used as a scientific support for updating or improving safety standard site and database required to draw up an area plan management.

Keywords: avifauna, Natura 2000, ROSPA0137 Pădurea Radomir.

Rezumat. Analiză de ansamblu asupra avifaunei din situl Natura 2000 ROSPA0137 Pădurea Radomir. Studiul prezintă rezultatele investigațiilor avifaunistice realizate în situl ROSPA0137 Pădurea Radomir în lunile aprilie - iulie 2010 și ianuarie - august 2014. După o prezentare succintă a caracteristicilor geomorfologice și hidrografice ale ariei, precum și a tipurilor de biotopuri din perimetrul sitului, aducem date noi privind diversitatea avifaunistică și estimările numerice ale populațiilor de specii de păsări care cuibăresc în sit sau staționează în timpul migrațiilor de primăvară - toamnă. În tabloul avifaunistic sunt cuprinse, totodată, și speciile de păsări care tranzitează situl. Întrucât multe din speciile de păsări identificate în aria protejată sunt de interes conservativ european, pentru fiecare am prezentat statutul de protecție instituit prin legislația națională și europeană. Datele studiului pot constitui suportul științific pentru reactualizarea sau îmbunătățirea fișei standard a sitului și pentru baza de date necesare la întocmirea planului de management al ariei.

Cuvinte cheie: avifauna, Natura 2000, ROSPA0137 Pădurea Radomir.

INTRODUCTION

ROSPA0137 Pădurea Radomir is located in the southwest of the country, on the level of the Romanați Plain subunit Leu-Rotunda Field, about 12-14 km west of Caracal and 40-42 km east of Craiova, between the railway Craiova - Caracal, to the north and București - Craiova European road (E70), to the south. Site area is 1233 ha (Fig. 1).

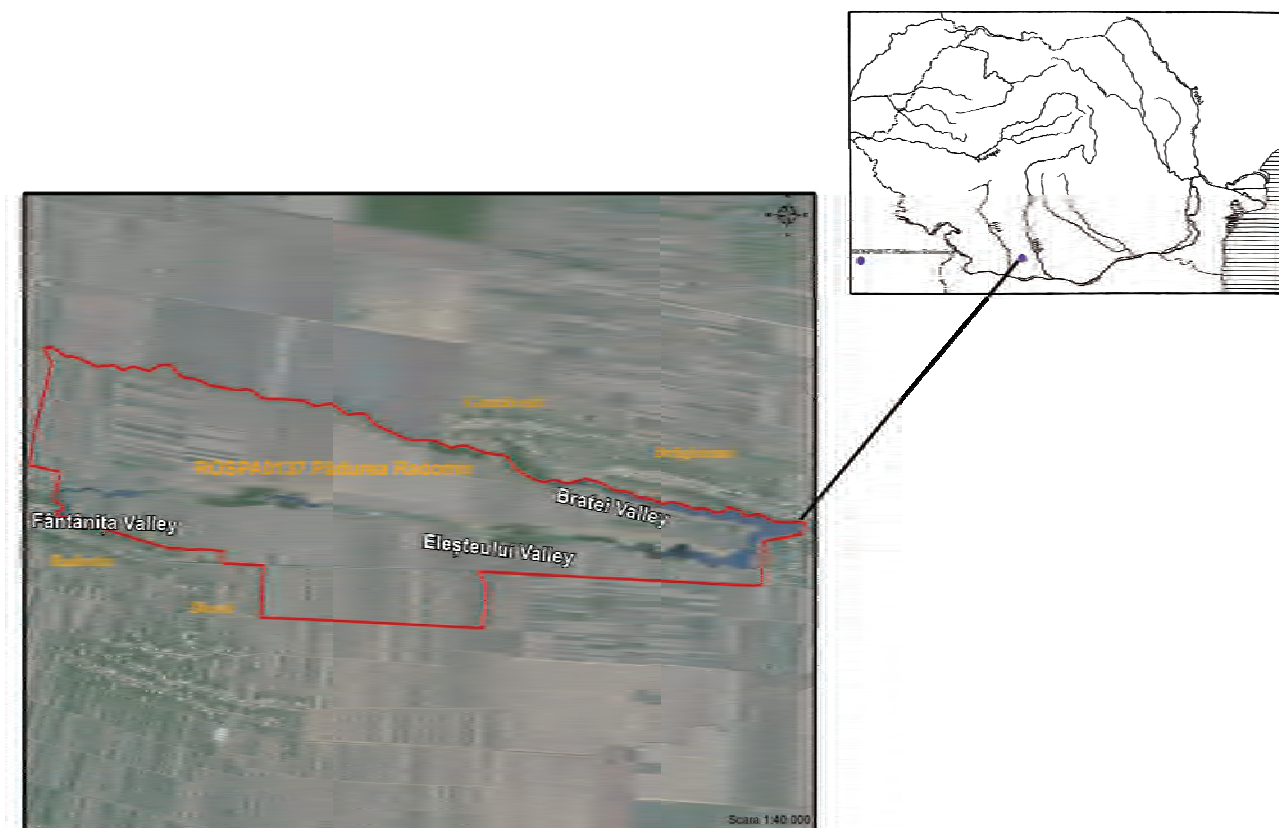


Figure 1. Perimeter of Nature 2000 site ROSPA0137 Pădurea Radomir (www.padurearadomir.ro).

In the Leu-Rotunda Field there are two main subunits: the dunes landscape to the west and the loess plains with torrential valleys which are tens of kilometres long to the east that often intersected the groundwater. The valleys are parallel, with a northwest - southeast orientation that corresponds to the west winds direction, which are a characteristic of Oltenia Plain (COTEȚ, 1957). The valleys' depth of Leu Field - Dioști is 30-50 m. Nowadays, the winds play an important role in shaping the landscape, due to their direction and steppe regime with low rainfall.

As a result of the suffusion followed by compaction, on the loess arise closed small excavations with circular or oval shapes called "kroves or gavans". The continuous broadening and deepening of the "kroves and gavans" leads to the formation of large depression spaces, called "padinas" (like those in the west and southeast of Dioști). The perimeter of Nature 2000 site ROSPA0137 Pădurea Radomir includes the upper and medium hydrographic basin of the Gologanu Creek (Caracal) and its tributary the Eleșteului Valley (Fig. 1).

The Gologanu Creek is about 16 km long and it is known in the upper course of the creek as the Brata Valley and in the lower course, as the Caracal Creek. The Eleșteu Valley is 6.5 km long and it flows into the Gologanu Creek at Drăghiceni. In the upper course, west of Radomir Village, the tributary is called the Fântânița Valley. The existing lakes have different origins, most natural lakes being formed in kroves; others - like the ones in the Gologanu Valley and the Eleșteului Valley - are man-made dam reservoirs. The hydric load in the Gologanu Creek basin is made of rainfall water and surface runoff. The groundwater from the sand dunes drains in the Gologanu and the Eleșteului Valley. The krove water, padina and streams are dependent on the rainfalls. In dry periods the evaporation is intense and the groundwater level decreases (BADEA et al., 2011). The climate is continental dry with Mediterranean influences. The average yearly temperature is 10.9°C and the average annual precipitations are 522.8 mm. In summer, maximum temperature is about 36°C, only exceptionally increasing to 40°C. The amount of precipitations varies between 400-600 mm. The most frequent winds are Crivățul and Austrul. Crivatul wind blows during winter from the north-east and Austrul blows during summer from the west. The first is cold and wet and the second is dry and warm. In terms of pedological aspects, most of the deposits are represented by loams, clays, loess, and loess and fluvial deposits including alluvial and proluvial and colluvial. The most widespread soils are the reddish-brown soil, brown luvic soil (red luvisol), brown mesobasic soil, cambic chernozem, psamosoil, marshy grounds (GRIGORAȘ et al., 2009). The plain field is particularly favourable for agricultural crops, especially cereals.

The geomorphological and hydrographic features of the area generate the biotope types of the site perimeter. The main biotopes of the site are:

- terrestrial biotopes represented by: arable land (76%); pasture (14.6%); forest vegetation areas (1.6%) relatively young plantations of acacia - *Robinia pseudacacia* (Radomir Forest, Drăghiceni Forest) and oak species composing Grozăvești Oak Forest (located in the southeastern half of the site), which is characterized by pedunculate oaks - *Quercus robur* and gray oak - *Q. pedunculiflora* specimens exceeding 100 years of age (Photo 1 and 2); between the species of oaks there are other tree species interfering as: *Populus* sp., *Ulmus* sp. and *Fraxinus* sp., and various species of shrubs (*Crataegus monogyna*, *Rosa canina* etc.);

- aquatic biotopes: ponds, streams (4.76%);

- amphibious or semi-aquatic biotopes represented by reed and wetlands (1.12%).

In phyto-graphic terms, the site area is part of the steppe. The less rich vegetation and few places of refuge are the parameters that determine a restricted biodiversity (***) (1960; BĂLĂIANU, 1980). However, PAPP & FĂNTÂNĂ (2008) emphasized the importance of the avifaunistic area of Pădurea Radomir (1031 ha) due to the presence of large colonies of *Falco vespertinus* and *F. tinnunculus*, mentioning the other prey species such as *Circus cyaneus*, *C. pygargus*, *Buteo buteo* and *Falco subbuteo*. Later, the research conducted by us in 2010, the A. I. A. Pădurea Radomir has confirmed the existence of *Falco vespertinus* and *F. tinnunculus* colonies favoured by the availability of food resources (especially rodents) and nesting places (many corvid nests). In addition, the surrounding areas proved to be populated by migratory bird species with unfavourable worldwide / European Conservatory Status like: *Aythya nyroca*, *Ciconia ciconia*, *Egretta garzetta*, *Chlidonias hybridus*, *Lanius collurio*, *L. minor*, *Emberiza hortulana* etc, whose presence has strengthened the argument for its designation as a special Protection Area (SPA) and its integration into the ecological network Natura 2000 (H. G. No. 971 of 5 October 2011). SPA area was, however, extended to 1,233 ha, to include aquatic and terrestrial biotopes in the eastern area, which are important for nesting species of conservation interest mentioned above.

The SPA standard sheet includes 39 species, of which 27 are confirmed in our study. The species that we do not have information about are: *Circus pygargus*, *Caprimulgus europaeus*, *Jynx torquilla*, *Dendrocopos medius*, *Riparia riparia*, *Sylvia atricapilla*, *S. borin*, *Phylloscopus trochilus*, *Regulus ignicapillus*, *Ficedula albicollis*, *Lanius excubitor*, *Carduelis spinus*. Instead, however, in our research we have identified species of European conservation interest, which are not cited in the text of the site. Therefore, the aim of this study is to add new data to avifaunistic diversity of the site and estimate the number of populations of species that nest and / or station in the site during the spring-autumn migrations. The data can be used as a scientific support for updating or improving safety standard of the site and database required to draw up an area plan management.

MATERIAL AND METHOD

As research material we used: binoculars (Zeiss Jena 10x50 and 12x40 Buchnell), Bird field Guide (PETERSON et al., 1989; BRUUN et al., 1999), a camera (Sony 15 x) and for the scientific processing data (systematic, ecological, phenological classification) we have documented from the literature: SZABÓ-SZELEY & BACZO, 2006;

CĂTUNEANU et al., 1978; MUNTEANU, 1992). The protection status of the species was supported by the European and national legislation in force.

The study methods consisted in direct observations - made at fixed locations (near feeding or resting places of the birds) or move on predetermined paths and counting in the points with groups of birds. The avifauna research of the site was made at the following dates: the 10th of April 2010, the 8 to the 9th of May 2010, the 5th of July 2010, the 20th of December 2013, the 11th of January 2014, the 22nd of February 2014, the 15th and the 24th of March 2014, the 22nd and the 29th of April 2014, the 19th and the 26th of May, the 6th and the 21st of June, the 14th and the 22nd of July, covering all environmental aspects (hiemal: the 1st of November to the 1st of March; prevernal: the 1st of March to the 1st of May; vernal: the 1st of May to the 15th of June; aestival: the 15th of June to the 15th of July and serotonin: the 15th of July to the 15th of September), except for the appearance of the autumn aspect (the 1th of September - the 1st of November).

Please note that the research was carried out in 2010 and it was part of the development scientific project Nature 2000 network, coordinated by N. I. R. D. "Delta" from Tulcea.

Along with the avifaunistic field data, we have also collected some bird ethological aspects (breeding behaviour, territorial defense), ecological (interspecific relationships and the relationship between birds and environmental factors), as well as human activities aspects, etc.

RESULTS AND DISCUSSIONS

Based on our personal research results, we have accomplished an avifauna picture of the ROSPA0137 Pădurea Radomir, presented in Table 1. For each of the species we mentioned the affiliation belong to biotope type, phenological category, and some observations and numerical estimations, the threat and protection status at the national and European level. The avifaunistic list totals 69 species, classified in 34 Families and 15 systematic Orders. The best represented are the Orders: the Passeriformes (26 species), Ciconiiformes (6 species) and Anseriformes (5 species) followed by Accipitriformes, Galliformes, Columbiformes and Coraciiformes Orders, each with 3 species. In ecological terms, the dominance is represented by terrestrial species due to the weight of terrestrial habitats (grassland, arable land, woodland, etc.) compared with aquatic species that inhabit wetlands (ponds and amphibian habitats: reed, wetlands), much smaller in size.

Table 1. The avifauna list from the ROSPA0137 Pădurea Radomir site, the ecologic type, the phenological type and the protection statute of the birds species.

| No. | Species | Ecologic type | Phenological type | Own observation | | Protection statute | | | | |
|-------------------------------|------------------------------|---------------|-------------------|----------------------------|--|--------------------|-------------|------------|-----------|----------------------|
| | | | | Breeding (pairs estimated) | Estimated effectives (number of specimens) | Birds Directive | Berna Conv. | Bonn Conv. | G.E.O. 57 | Hunting Law 407/2006 |
| ORD. PODICIPEDIFORMES | | | | | | | | | | |
| Fam. Podicipedidae | | | | | | | | | | |
| 1. | <i>Podiceps cristatus</i> | Aqu. | SV | 6-8 | + 30 | - | AIII | - | - | AII |
| ORD. PELECANIFORMES | | | | | | | | | | |
| Fam. Phalacrocoracidae | | | | | | | | | | |
| 2. | <i>Phalacrocorax carbo</i> | Aqu. | P | - | 2 | - | AIII | - | - | AI |
| ORD. CICONIIFORMES | | | | | | | | | | |
| Fam. Ardeidae | | | | | | | | | | |
| 3. | <i>Ixobrychus minutus</i> | Aqu. | SV | 4-6 | 16 – 24 | AI | AII | AII | A III | AII |
| 4. | <i>Nycticorax nycticorax</i> | Aqu. | SV | 8-10 | 40 - 50 | AI | AII | - | A III | AII |
| 5. | <i>Ardeola ralloides</i> | Aqu. | SV | ? | 3 – 5 | AI | AII | - | A III | AII |
| 6. | <i>Egretta garzetta</i> | Aqu. | SV, P | 10-12 | 50 - 60 | AI | AII | - | A III | AII |
| 7. | <i>Ardea cinerea</i> | Aqu. | SV, P | 8-10 | + 30 | - | AIII | - | - | AII |
| 8. | <i>Ardea purpurea</i> | Aqu. | SV | 4-7 | 16 - 20 | AI | AII | AII | A III | AII |
| Fam. Ciconiidae | | | | | | | | | | |
| 9. | <i>Ciconia ciconia</i> | Aqu. | SV | 3-5 | + 12 | AI | AII | AII | A III | AII |
| 10. | <i>Ciconia nigra</i> | Ter. | P | - | 1 | AI | AII | AII | A III | AII |
| ORD. ANSERIFORMES | | | | | | | | | | |
| Fam. Anatidae | | | | | | | | | | |
| 11. | <i>Cygnus olor</i> | Aqu.. | WV, P | - | 5 | - | AIII | A II | - | AII |
| 12. | <i>Anas platyrhynchos</i> | Aqu. | PM | 5-8 | + 140 | - | AIII | AII | - | AI |
| 13. | <i>Anas querquedula</i> | Aqu. | SV | 2-4 | + 26 | - | AIII | AII | - | AI |
| 14. | <i>Aythya ferina</i> | Aqu. | P, WV, SV | ? | 2 - 5 | - | AIII | AII | - | AI |
| 15. | <i>Aythya nyroca</i> | Aqu. | SV | 1 – 2 | 3 - 6 | AI | AIII | AII | A III | AI |
| ORD. ACCIPITRIFORMES | | | | | | | | | | |
| Fam. Accipitridae | | | | | | | | | | |
| 16. | <i>Circus cyaneus</i> | Ter. | WV, P | - | 1 - 2 | AI | AII | AII | A III | AII |
| 17. | <i>Accipiter nisus</i> | Ter. | WV, P | - | 1 - 2 | - | AII | AII | - | AII |
| 18. | <i>Buteo buteo</i> | Ter. | R | ? | 2 - 4 | - | AII | AII | - | AII |
| ORD. FALCONIFORMES | | | | | | | | | | |
| Fam. Falconidae | | | | | | | | | | |
| 19. | <i>Falco tinnunculus</i> | Ter. | PM | 10-12 | + 40 | - | AII | AII | - | AII |
| 20. | <i>Falco vespertinus</i> | Ter. | SV | 15-17 | + 55 | AI | AII | AII | A III | AII |

| | | | | | | | | | | |
|------------------------------|----------------------------------|------|--------|--------|----------------|----|------|-----|-------|-----|
| ORD. GALLIFORMES | | | | | | | | | | |
| Fam. Phasianidae | | | | | | | | | | |
| 21. | <i>Perdix perdix</i> | Ter. | R | + 18 | | - | AIII | - | - | AI |
| 22. | <i>Phasianus colchicus</i> | Ter. | R | + 10 | | - | AIII | - | - | AI |
| 23. | <i>Coturnix coturnix</i> | Ter. | SV | + 15 | | - | AIII | AII | - | AI |
| ORD. GRUIFORMES | | | | | | | | | | |
| Fam. Rallidae | | | | | | | | | | |
| 24. | <i>Gallinula chloropus</i> | Aqu. | SV | + 20 | + 100 | - | AIII | - | - | AI |
| 25. | <i>Fulica atra</i> | Aqu. | PM | 15-20 | 25 - 50 | - | AIII | - | - | AI |
| ORD. CHARADRIIFORMES | | | | | | | | | | |
| Fam. Recurvirostridae | | | | | | | | | | |
| 26. | <i>Himantopus himantopus</i> | Aqu. | SV, P | 2-3 | 4 - 8 | AI | AII | AII | A III | AII |
| Fam. Charadriidae | | | | | | | | | | |
| 27. | <i>Vanellus vanellus</i> | Aqu. | SV, P | + 12 | + 60 | - | AIII | AII | - | AII |
| Fam. Scolopacidae | | | | | | | | | | |
| 28. | <i>Tringa ochropus</i> | Aqu. | P | ? | + 14 | - | AII | AII | - | AII |
| Fam. Laridae | | | | | | | | | | |
| 29. | <i>Larus ridibundus</i> | Aqu. | P | - | 12-18 | - | AIII | - | - | AII |
| 30. | <i>Larus cachinans</i> | Aqu. | P | - | 2 - 4 | - | - | - | - | AII |
| Fam. Sternidae | | | | | | | | | | |
| 31. | <i>Sterna hirundo</i> | Aqu. | P, SV | - | 25-30 | AI | AII | AII | A III | AII |
| 32. | <i>Chlidonias hybrida</i> | Aqu. | P, SV | 7 - 10 | 35-40 | AI | AII | - | A III | AII |
| ORD. COLUMBIFORMES | | | | | | | | | | |
| Fam. Columbidae | | | | | | | | | | |
| 33. | <i>Columba palumbus</i> | Ter. | SV | 6 - 8 | | - | - | - | - | AI |
| 34. | <i>Streptopelia decaocto</i> | Ter. | R | + 15 | | - | AIII | - | - | AI |
| 35. | <i>Streptopelia turtur</i> | Ter. | SV | 2 - 4 | | - | AIII | - | - | AI |
| ORD. CUCULIFORMES | | | | | | | | | | |
| Fam. Cuculidae | | | | | | | | | | |
| 36. | <i>Cuculus canorus</i> | Eur. | SV | + 4 | | - | AIII | - | - | AII |
| ORD. STRIGIFORMES | | | | | | | | | | |
| Fam. Strigidae | | | | | | | | | | |
| 37. | <i>Athene noctua</i> | Ter. | R | 2 - 4 | | - | AII | - | - | AII |
| 38. | <i>Asio otus</i> | Ter. | R | 1 - 3 | | - | AII | - | - | AII |
| ORD. CORACIIFORMES | | | | | | | | | | |
| Fam. Meropidae | | | | | | | | | | |
| 39. | <i>Merops apiaster</i> | Ter. | SV | + 7 | + 28 | - | AII | AII | - | AII |
| Fam. Coraciidae | | | | | | | | | | |
| 40. | <i>Coracias garrulus</i> | Ter. | SV | ? | 6 - 8 | AI | AII | AII | A III | AII |
| Fam. Upupidae | | | | | | | | | | |
| 41. | <i>Upupa epops</i> | Ter. | SV | 4 - 6 | | - | AII | - | - | AII |
| ORD. PICIFORMES | | | | | | | | | | |
| Fam. Picidae | | | | | | | | | | |
| 42. | <i>Dendrocopos syriacus</i> | Ter. | R | 1-2 | 2 - 3 | AI | AII | - | A III | AII |
| 43. | <i>Dendrocopos major</i> | Ter. | R | 1-2 | 1- 3 | - | AII | - | - | AII |
| ORD. PASSERIFORMES | | | | | | | | | | |
| Fam. Alaudidae | | | | | | | | | | |
| 44. | <i>Alauda arvensis</i> | Ter. | PM, SV | + 35 | + 100 | - | AIII | - | - | AII |
| 45. | <i>Galerida cristata</i> | Ter. | R | + 15 | | - | AIII | - | - | AII |
| Fam. Hirundinidae | | | | | | | | | | |
| 46. | <i>Hirundo rustica</i> | Ter. | SV | zeci | + 200 | - | AIII | - | - | AII |
| Fam. Motacillidae | | | | | | | | | | |
| 47. | <i>Anthus campestris</i> | Ter. | SV | + 8 | | AI | AII | - | A III | AII |
| 48. | <i>Motacilla flava</i> | Ter. | SV | + 16 | | - | AII | - | - | AII |
| 49. | <i>Motacilla alba</i> | Eur. | SV | + 5 | | - | AII | - | - | AII |
| Fam. Turdidae | | | | | | | | | | |
| 50. | <i>Luscinia megarhynchos</i> | Ter. | SV | + 4 | | - | AII | - | - | AII |
| Fam. Sylviidae | | | | | | | | | | |
| 51. | <i>Acrocephalus arundinaceus</i> | Aqu. | SV | + 6 | | - | AII | - | - | AII |
| 52. | <i>Sylvia communis</i> | Ter. | SV | + 4 | | - | AII | - | - | AII |
| Fam. Paridae | | | | | | | | | | |
| 53. | <i>Parus major</i> | Ter. | R | + 20 | | - | AII | - | - | AII |
| Fam. Oriolidae | | | | | | | | | | |
| 54. | <i>Oriolus oriolus</i> | Ter. | SV | + 5 | | - | AII | - | - | AII |
| Fam. Laniidae | | | | | | | | | | |
| 55. | <i>Lanius collurio</i> | Ter. | SV | 6-10 | | AI | AII | - | A III | AII |
| 56. | <i>Lanius minor</i> | Ter. | SV | 5 - 8 | | AI | AII | - | A III | AII |
| Fam. Corvidae | | | | | | | | | | |
| 57. | <i>Garullus glandarius</i> | Ter. | R | + 10 | | - | - | - | - | AI |
| 58. | <i>Pica pica</i> | Ter. | R | tens | tens /hundreds | - | - | - | - | AII |
| 59. | <i>Corvus monedula</i> | Ter. | R | tens | hundreds | - | - | - | - | AI |
| 60. | <i>Corvus frugilegus</i> | Ter. | R | tens | hundreds | - | - | - | - | AI |

| | | | | | | | | | | |
|--------------------------|----------------------------|------|----|------|---------------------|----|------|---|-------|-----|
| 61. | <i>Corvus cornix</i> | Ter. | R | + 18 | tens | - | - | - | - | AI |
| Fam. Sturnidae | | | | | | | | | | |
| 62. | <i>Sturnus vulgaris</i> | Ter. | R | tens | hundreds /thousands | - | - | - | - | AI |
| Fam. Passeridae | | | | | | | | | | |
| 63. | <i>Passer domesticus</i> | Ter. | R | tens | hundreds | - | - | - | - | AI |
| 64. | <i>Passer montanus</i> | Ter. | R | tens | hundreds | - | AIII | - | - | - |
| Fam. Fringillidae | | | | | | | | | | |
| 65. | <i>Fringilla coelebs</i> | Ter. | R | + 7 | | - | AIII | - | - | - |
| 66. | <i>Carduelis chloris</i> | Ter. | R | + 14 | | - | AII | - | - | AII |
| 67. | <i>Carduelis carduelis</i> | Ter. | R | ? | tens | - | AII | - | - | AII |
| Fam. Emberizidae | | | | | | | | | | |
| 68. | <i>Emberiza hortulana</i> | Ter. | SV | + 12 | | AI | AIII | - | A III | AII |
| 69. | <i>Emberiza calandra</i> | Ter. | R | + 28 | | - | AIII | - | - | AII |

Legend:

Phenological type: R – resident; PM – partial migrant, P – passage visitors; SV – summer visitors, WV – winter visitors.

Ecologic type (Habitat): Aqu. – aquatic, Ter. – terrestrial, Eur. – eurytopic.

Protection statute:

Birds Directive: European Council Directive 79/409 E.E.C. regarding wild birds conservation, adopted on the 2nd of April 1979, AI/Annex 1 – species that are the subject of special conservation measures regarding the habitat.

Berna Convention: No. 13 Law from the 11th of March 1993 for Romania adhesion to the Convention regarding the conservation of wildlife and natural habitats from Europe, adopted at Berne on the 19th of September 1979; AI/Annex II – strictly protected fauna species; AIII/Annex III – protected fauna species.

Bonn Convention: 13/1998 Law for Romania adhesion to the Convention regarding the conservation of the migratory species from wild animals, adopted at Bonn on the 23rd of June 1979; AI/Annex I migratory species with unfavourable conservation statute, for which the countries must assure immediate protection; AII/Annex II - migratory species with unfavourable conservation statute, for which the countries must assure conservation and management.

G. E. O. 57: Government Emergency Ordinance no. 57 from the 20th of June 2007 regarding the regime of the protected natural areas, conservation of the natural habitats, flora and wild fauna (modified and completed through O.U. from M. Of. No. 787/25.XI.2008); AIII/ Annex 3 – plants and animals species, whose conservation requires the designation of special conservation areas and of special avifaunistic protection areas.

Hunting Law 407/2006 (modified and completed through O.U din M. Of. no. 787/25.XI.2008): AII/Annex II – wild fauna of hunting interest, at which hunting is forbidden; Annex I / wild fauna of hunting interest at which hunting is allowed in some periods.

Among the largest terrestrial species, we recorded the majority of them to Passeriformes (*Alauda arvensis* and *Hirundo rustica* - dozens (hundreds), *Corvus frugilegus* - over 300-400 specimens, *Pica pica* and *C. monedula* - tens / hundreds of specimens, *Sturnus vulgaris* - hundred / thousand specimens, etc.); diurnal predatory species: *Falco tinnunculus* and *F. vespertinus* were also an important avifaunistic component, which was noted especially during the breeding process.

The aquatic species which revealed to be numerous over the study period are: *Podiceps cristatus* - about 35 specimens, *Nycticorax nycticorax* 40-50 specimens (ad., and juv.), *Egretta garzetta*, 50-60 specimens (ad., and juv.), *Ardea cinerea* - over 35 specimens (ad., and juv.). During spring migration, we recorded significant numbers of anatides, namely *Anas platyrhynchos* - 150 specimens and *A. querquedula* - over 35 specimens and charadriide: *Vanellus vanellus* - over 40 specimens.

In terms of phenology, the majority was represented by summer visitor species, largely nesting in the area, followed by partially-migratory and sedentary species.

The first concerns regarding the nesting process, we have recorded at *Corvus frugilegus*, which came back to the old nests installed in Grozăvești Oak Forest from the Eleșteului Valley, in the first half of March, where it made a large colony (over 150 nests).

Since the second half of March, we noticed increased prenuptial events (territoriality songs, "dance" calls, ornamental plumage) at several species, such as *Podiceps cristatus*, *Anas platyrhynchos*, *Falco tinnunculus*, *Fulica atra*, *Vanellus vanellus*, *Alauda arvensis*, etc.

In early April (01.04), we registered species competitiveness between *Nycticorax nycticorax* and *Ardea cinerea*, in order to occupy about. 8-10 nests, which were built in *Populus alba* trees near the colony of *C. frugilegus* (the Eleșteului Valley - Grozăvești), finally the nests were occupied by the Grey Heron.

During the second half of April (22.04 and 29.04), we caught the most spectacular events of the ardeide species: *Egretta garzetta* (10-12 pairs) and *Nycticorax nycticorax* (8-10 pairs) which joined the *C. frugilegus* colony. 10-12 pairs of *Falco vespertinus* species joined the former ones. Red-footed Falcon, however, began nesting in late May and the first half of June, when the above mentioned species already had baby birds in various stages of development. In the research conducted in July (14.07 and 22.07) we noticed that the red-footed falcon was still in the nest feeding chick period.

As the nesting avifauna attests the best quality and ornithological importance of the area, we will continue to report further details on species nesting in the territory of ROSPA0137 Pădurea Radomir site.

Podiceps cristatus nests in deep, large swamps with growing paludous vegetation (Marioara Swamp - Drăghiceni) from the Eleșteului Valley, in low amounts.

Ciconiiformes are found on nearly all swamps in the study area; however, the frequency and density of the recorded species are different. *Ixobrychus minutus* was frequently reported by us during the vernal and aestival aspects on the Eleșteului Valley, wetlands with dense reed from Drăghiceni area; livestock species cannot be assessed with certainty because of their hidden living in the dense macrophytes of the lakes. *Nycticorax nycticorax* is a summer visitor in the mixed colony stationed in the grove forest with tall and old trees from the Eleșteului Valley (Photo 3 and 4). *Ardeola ralloides* was reported by few specimens (3-5) in isolated wetlands with rich vegetation and shallow waters of the western end of the site known as the

Fântânița Valley, only in the second decade of April. We have no indication of nesting species in the area. Few specimens of *Egretta garzetta* are present throughout the warm season, almost in all shallow wetlands. In the latter part of April (29.04) the breeding pairs settled in nests built in high tree vegetation (*Quercus* sp. etc.) from the Eleșteului Valley (Oak Forest Grozăvești) - Photo 5 and 6. Here, they have received trophic resources available in the swamps near the colony or from the eastern area, and the security offered by the cohabitation with other species of ardeides, carrion crows and the Red-footed Falcon. *Ardea cinerea* has often settled at the swamp shores, especially in the Eleșteului Valley and the meadows surrounding them. During the second half of June, the 8-10 breeding pairs have ended their nesting period - Photo 7. *Ardea purpurea* was reported by us in the Eleșteului Valley - in the eastern half of the site, on the storage ponds, covered by dense reed from Drăghiceni area - Photo 8. The hiding living of these species does not allow us a real estimate, but the number of juvenile specimens captured in mid-July, indicates a population of at least 4-7 pairs. *Ciconia ciconia* is a species often observed in the site, during feeding trips, but the number of specimens reported was generally modest. Their nests are placed on electric poles located in the surrounding town area.

The low numbers of Anseriformes identified during the vernal - aestival season are mostly brooding. *Anas platyrhynchos* is the most common and largest hatchery flocks of Anseriformes. *Anas querquedula*, *Aythya nyroca* and *A. ferina* were rarely reported by us in the vernal - summer season and few pairs (2-3), especially in storage swamps, with rich paludous vegetation in the eastern area.

Diurnal raptors (Order Falconiformes), which nest and also uses terrestrial trophic biotope resources of the site and its surroundings, more precisely from the agroecosystems are: *Falco tinnunculus* - sedentary, migratory species common in the study sector, which, starting the end March until the second decade of April we observed her often occupying old nests of *Pica pica* and *Corvus frugilegus* from the Acacia plantations of Radomir and Drăghiceni; *Falco vespertinus* is a summer visitor, currently on the site since the second half of April - Photo 9, 10 and 11. The most representative colony of the Red-footed Falcon is located in the Oak Forest Grozăvești (10-12 pairs), from the Eleșteului Valley and another colony, less numerous, was located in the Acacia plantation of Radomir (about 5 pairs).

The Galliformes are represented by three species common in the agroecosystems; one of them is the summer visitor species - *Coturnix coturnix* and two sedentary species - *Phasianus colchicus*, *Perdix perdix*. All three are terricolous species that nest and feed on the ground and have dozens of copies in the area.

In the Gruiformes order, we know two species - *Gallinula chloropus* and *Fulica atra*, which are more numerous on the storage ponds with rich vegetation covered ponds from the Eleșteului Valley (Drăghiceni) and the ones from the Fântânița Valley (Radomir).

Charadriiformes, which nest in the site, are represented by two species (assigned to 2 families) whose frequency and distribution are influenced by the hydroclimatic conditions. *Himantopus himantopus* is rarely a summer visitor in the site; only 2-3 nesting pairs were recorded by us during the vernal-summer season on some swamps formed in the eastern sector of the Eleșteului and Bratei Valleys, located at the northern limit of the site. *Vanellus vanellus* is a summer visitor much more often seen than the previous species. At the end of February and in July we have recorded the most important lots (+ 60 specimens), on meadows and farmland near to the ponds from the Eleșteului Valley. The prenuptial events, as well as the presence of the juvenile specimens observed at these two species by the end of the summer season are also an indication that they were nesting in the area. The Sternides are represented by two species summer visitors: *Sterna hirundo* and *Chlidonias hybrida*. *Chlidonias hybrida* forms small colonies on the ponds with vegetation from the Fântânița Valley (Radomir).

There are four nesting species of Columbiformes present: *Columba palumbus* has a large area of distribution and a constant presence in the area, at least 6-8 pairs observed in Acacia plantations in Radomir and Drăghiceni, especially in the Oak Forest Grozăvești. *Streptopelia decaocto* is a sedentary specie, common in the in the vicinity of the studied site. *Streptopelia turtur* is a summer visitor species, which is relatively rare in the site; we have noticed, either by sound or by direct observations, especially in the southwest of the site, in the arboreal vegetation of the Radomir area. *Cuculus canorus* is an usually summer visitor, part of the Cuculiformes Order, it was frequently reported in reed areas, which leads us to assume that they lay their eggs in the Warbler nests installed in these habitats.

We have identified two sedentary species of the night group raptors (Strigiformes Order), which were directly observed and relatively rare: *Athene noctua*, in the neighbourhood of Drăghiceni and *Asio otus* in Acacia plantation of Radomir.

The Coraciiformes are represented by three species summer visitors: *Merops apiaster* was a small colony in the eastern part of the immediate vicinity of the protected area; *Coracias garrulus* was observed by us in the Oak Forest Grozăvești only at the end of nesting, which is why we attribute the passage status to this species in the site; *Upupa epops* is spread within the entire studied area but it is not numerous.

The most frequent events of piciformes we have noticed at *Dendrocopos syriacus* (common species found in gardens with shrubs) and, more rarely, *D. major*.

The Passeriformes are mostly nesting species in all habitats of the researched area (forests, trees and isolated shrubs, reed, cropland or grassland). We have recorded a significant presence in terms of frequency and herds at the agroecosystems species (*Galerida cristata*, *Alauda arvensis*, *Motacilla flava*, *Corvus frugilegus*, *Sturnus vulgaris*, *Passer montanus*, *Miliaria calandra*), which are mostly sedentary species. In the vernal and summer seasons there were also highlighted the following species: *Lanius minor*, *L. collurio* and *Emberiza hortulana*, summer visitor species with a special protection status, which we recorded mostly in open spaces, with shrubs / trees and at the selvage of the Acacia plantations of Grozăvești and Radomir. Since many of the bird species identified in the site are of European

Conservation Interest, in Table 1 we have mentioned the present protection status of each species from the ROSPA0137 Pădurea Radomir, according to the European legislation in force. Statistically, the 69 species recorded are:

- 19 species of preserved bird habitats are covered by the 1st Annex of the Birds Directive: *Ixobrychus minutus*, *Ardeola ralloides*, *Nycticorax nycticorax*, *Egretta garzetta*, *Ardea purpurea*, *Ciconia ciconia*, *C. nigra*, *Aythya nyroca*, *Circus cyaneus*, *Falco vespertinus*, *Himantopus himantopus*, *Sterna hirundo*, *Chidonias hybridus*, *Dendrocopos syriacus*, *Coracias garrulus*, *Anthus campestris*, *Lanius collurio*, *L. minor*, *Emberiza hortulana*;

- 35 species are also strictly protected by the 2nd Annex of the Bern Convention and the other 25 species are under the protection of the 3rd Annex of the same Convention;

- 21 species are listed in the 2nd Annex of the Bonn Convention (migratory species with unfavourable conservation status, which must be ensured by the states regarding the conservation and management);

- 19 species are the aim for designating the area as a Special Protection Area, according to the 3rd Annex of G. E. O. 57;

- 48 species are banned to be hunted according to the 2nd Annex of the Hunting' law (Fig. 2).

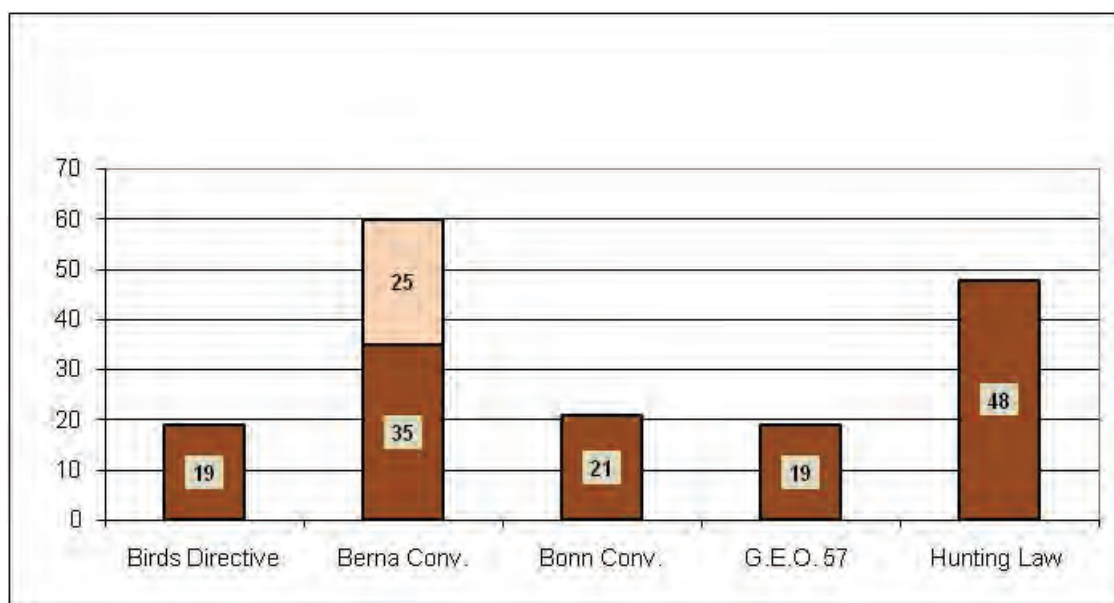


Figure 2. The avifaunistic graphic distribution of ROSPA0137 Pădurea Radomir, in terms of protection status.

The graphic shown in Fig. 2 reflects a significant proportion of preserved species. There should be taken management measures, which are required in order to ensure their preservation and perpetuation in the studied site.

We specify that the species *Ixobrychus minutus*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Ardea purpurea*, *Himantopus himantopus*, *Dendrocopos syriacus* identified by us in the area of the site, during the research from this year (2014) are not included in the standard sheet of the site. Because these species are of European conservation interest, as cited in the annexes of the laws mentioned above, we consider necessary to include them in standard sheet of the site for the benefit of management.

CONCLUSIONS

The general avifauna analysis of the ROSPA0137 Pădurea Radomir site reveals that although the site area is part of the Oltenia Plain with little vegetation, less shelter and nesting places for birds, existing biotopes here (arable land (76%), pasture (14.6%), forest cover (1.6%), ponds and reed (5.89%), it attracts birds and fauna of an important value of conservation interest such as: *Ixobrychus minutus*, *Nycticorax nycticorax*, *Egretta garzetta*, *Ardea purpurea*, *Aythya nyroca*, *Falco vespertinus*, *Himantopus himantopus*, *Chlidonias hybridus*, *Lanius collurio*, *L. minor*, *Emberiza hortulana* etc. The observations made during breeding have shown that, in order to benefit from the trophic resources available on the site, a close relationship cohabitation was created between ardeide species (*Egretta garzetta*, *Nycticorax nycticorax* and *Ardea cinerea*) that joined a numerous colony of *C. frugilegus* installed in Grozăvești Oak Forest (south-eastern half of the site), near the Eleșteului Valley. The vacant nests in the mixed colony were occupied by Red-Footed Falcon (*Falco vespertinus*), which started nesting at the end of May and the first half of June, when the above-mentioned species already had baby birds in various stages of development.

Pre-nuptial events and the juvenile specimens, which were observed in adults around other various terrestrial species (*Falco tinnunculus*, *Columba palumbus*, Passeriformes such as *Alauda arvensis*, *Lanius collurio*, *L. minor*, *Emberiza hortulana* etc.) and aquatic (*Podiceps cristatus*, *Ixobrychus minutus*, *Ardea purpurea*, *Anas* sp., *Himantopus himantopus*, *Chlidonias hybridus*, *Vanellus vanellus* etc.) were indications that they were nesting also in the area.

Most bird species analysed by us are protected by the National and International Laws and Conventions and Birds Directive, which requires the development of an appropriate management programme of the studied area.

The new regarding the avifaunistic diversity of the site and estimate the number of populations of species that nest and / or station in the site during the spring-autumn migrations can be used as a scientific support for updating or improving safety standard of the site and database required to draw up an area plan management.

ACKNOWLEDGMENTS

We thank the Local Councils of Drăghiceni and Dioști cities, and the Olt Forest Department and A.P.I.A - DOLJ, for the information provided.

REFERENCES

- BADEA L., BUZA M, SANDU MARIA, SIMA MIHAELA. 2011. *Unitățile de relief ale României. V. Câmpiile pericarpătice*. Edit. ARS Docendi. București. 157 pp.
- BĂLĂIANU M. 1980. *Dioști. Pagini de istorie*. Monografie. [s.n] București. 283 pp.
- BRUUN B., DELIN H., SVENSSON L. 1999. *Păsările din România și Europa. Determinator ilustrat* (versiunea românească: Munteanu D.). Edit. Hamlyn. Londra. 320 pp.
- CĂTUNEANU I. I., KORODI G. I., MUNTEANU D., PAȘCOVSCHI S., VESPREMEANU E. 1978. *AVES. Fauna R.S.R.* Edit. Academiei. București. **15**(1): 1-314.
- COTEȚ P. 1957. *Câmpia Olteniei*. Edit. Științifică. București. 270 pp.
- GRIGORAȘ C., BOENGIU S., VLĂDUȚ ALINA, GRIGORAȘ ELENA NARCISA, AVRAM S. 2009. *Solurile României*. Edit. Universitaria. Craiova. **1**. 338 pp. **2**. 264 pp.
- MUNTEANU D. 1992. *Dicționar poliglot al speciilor de păsări din România*. Publicațiile Societății Ornitologice Române. Mediaș. **1**. 78 pp.
- PETERSON R., MOUNTFORT G., HOOLLOM P. A. D. 1989. *Guide des Oiseaux d'Europe*. Edit. Delachaux et Niestle. Neuchatel - Paris. 460 pp.
- PAPP T. & FĂNTĂNĂ C. (Eds). 2008. *Ariile de Importanță Avifaunistică din România*. Publicație comună a Societății Ornitologice Române și a Asociației „Grupul Milvus”. Târgu-Mureș. 319 pp.
- SZABÓ-SZELEY L. & BACZÓ Z. 2006. *Nomenclatorul păsărilor din România – Nomenclator Avium Romaniae*. Edit. Aves. Odorheiu Secuiesc. 117 pp.
- ***. 1960. *Monografia geografică a R. P. R.* Edit. Academiei R. P. R. București. 742 pp.
- ***. 1993. Legea nr. 13 din 11 martie 1993, pentru aderarea României la Convenția privind conservarea vieții sălbatice și a habitatelor naturale din Europa, adoptată la Berna, la 19 septembrie 1979. *Monitorul Oficial nr. 62/25 martie/1993*.
- ***. 1998. Legea nr. 13 din 8 ianuarie 1998 pentru aderarea României la Convenția privind conservarea speciilor migratoare de animale sălbatice, adoptată la Bonn la 23 iunie 1979. *Monitorul Oficial nr. 24/26 ianuarie/1998*.
- ***. 2006. Legea vânătorii și a fondului cinegetic nr. 407/2006. *Monitorul Oficial nr. 944/22 noiembrie 2006*. București.
- ***. 2007. Legea nr. 197/2007 pentru modificarea și completarea Legii vânătorii și a protecției fondului cinegetic. *Monitorul Oficial nr. 472/13 iulie/2007*. București.
- ***. 2007. Ordonanță de urgență nr. 57/20 iunie 2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice. *Monitorul Oficial nr. 442/29 iunie/2007*. București.
- ***. 2009. Birds Directive 2009/147/EC of the European Parliament and of the Council of 30 november 2009 on the conservation of wild birds.
- ***. 2011. Legea nr. 49/2011 pentru aprobarea Ordonanței de urgență a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice. *M. Of. nr. 262/13 aprilie/2011*.
- ***. 2011. H. G. nr. 971/5 octombrie 2011, pentru modificarea și completarea Hotărârii Guvernului nr. 1.284/2007 privind declararea ariilor de protecție specială avifaunistică ca parte integrantă a rețelei ecologice europene Natura 2000 în România.
- ***. [www.padurearadomir.ro](http://padurearadomir.ro) (Accessed: January 30, 2014).
- ***. <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=ROSPA0137&release=4&form=Clean> (Accessed: March 05, 2014).

Mirela Sabina Ridiche

The Oltenia Museum, Craiova, str. Popa Șapcă, no.8, Craiova, 200422, Romania
E-mail: rimirela@yahoo.com

Monica Daniela Mateescu, Corina Lelia Vișan

Dolj - Environment Protection Agency, Craiova, str. Petru Rareș, no. 1, Dolj, Romania
E-mail: monica.daniela.mateescu@gmail.com
E-mail: corina_levia@yahoo.com

Received: July 30, 2014
Accepted: August 25, 2014



Photo 1 and 2. Grăzăvești Forest (*Quercus* sp.), the habitat for mixed colony of: *Egretta garzetta*, *Nycticorax nycticorax*, *Ardea cinerea*, *Falco vespertinus*, *Corvus frugilegus* (originals).



Photo 3. Adults of Night-Heron (*Nycticorax nycticorax*) (original).



Photo 4. Chickens of Night-Heron (*Nycticorax nycticorax*) (original).



Photo 5. Adults of Little Egret (*Egretta garzetta*) on nest and Rook (*Corvus frugilegus*) (original).



Photo 6. Chickens of Little Egret (*Egretta garzetta*) (original).



Photo 7. Juveniles of Grey Heron (*Ardea cinerea*) (original).



Photo 8. Juveniles of Purple Heron (*Ardea purpurea*) (original).



9.



10.

Photo 9 and 10. Adults of Red-footed (*Falco vespertinus*), male (left) and female (right) (originals).



Photo 11. Chickens of Red-footed (*Falco vespertinus*) (original).