

## PROTECTION OF THE AVIFAUNA FROM THE DANUBE FLOODPLAIN IN CALAFAT – THE JIU SECTOR (DOLJ COUNTY, ROMANIA)

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**Abstract.** The study synthesizes qualitative data regarding avifauna from the main important bird areas (IBA) from the Danube Floodplain, between Calafat and the Jiu. On one hand, there are presented the ecologic type of the bird species, their distribution in the main IBA and the IBA designation criteria and on the other hand it is pointed out the protection statute of each species, according to national and international legislation. In the territory studied by us, there were identified three IBA that were designated as special avifaunistic protection areas (ASPAs), integrated through H.G. No. 1284 / 24.X.2007 in Nature 2000 sites network. These are the Jiu - the Danube Confluence (ROSPA0023), Bistreț (ROSPA 0010), Calafat - Ciuperceni - the Danube (ROSPA 0013). For ASPA Bistreț we propose the extension from the actual surface of 1,916 ha to a surface of 21,552 ha, from the eastern point with 43°49'35"N 23°45'35"E coordinates to the western one 43°51'12"N 23°14'44"E. The scientific arguments, for which we consider necessary the ASPA extension, consist in the fact that the proposed territory is important for the nesting, shelter and food supply of many aquatic and terrestrial species of European interest, used as criteria for IBA and ASPA designation.

**Keywords:** protection, birdfauna, the Danube Floodplain.

**Rezumat. Protecția avifaunei din Lunca Dunării, în sectorul Calafat - Jiu (județul Dolj, România).** Lucrarea sintetizează date calitative privitoare la avifauna din principalele arii de importanță avifaunistică (AIA) din Lunca Dunării, dintre Calafat și Jiu; sunt prezentate pe de o parte tipul ecologic al speciilor de păsări, distribuția acestora în principalele AIA și criteriile de desemnare a AIA, iar pe de altă parte este evidențiat statutul de protecție al fiecărei specii, în conformitate cu legislația națională și internațională. În teritoriul investigat de noi au fost identificate trei arii de importanță avifaunistică (AIA) și desemnate ca arii de protecție specială avifaunistică (APSA), integrate prin H.G. nr. 1284 / 24.X.2007 în rețeaua de situri Natura 2000; acestea sunt: Confluența Jiu - Dunăre (ROSPA0023), Bistreț (ROSPA 0010), Calafat - Ciuperceni - Dunăre (ROSPA 0013). Pentru APSA Bistreț propunem extinderea de la actuala suprafață de 1.916 ha la o suprafață de 21.552 ha, respectiv de la punctul estic cu coordonatele 43°49'35"N 23°45'35"E la punctul vestic 43°51'12"N 23°14'44"E. Argumentele științifice pentru care considerăm necesară extinderea APSA rezidă din faptul că teritoriul propus este important pentru cuibăritul, refugiul și hrana multor specii acvatice și terestre de interes european, folosite drept criterii pentru desemnarea AIA și APSA.

**Cuvinte cheie:** protecție, avifaună, Lunca Dunării.

### INTRODUCTION

As a result of the embanking, draining and rearranging of the lands from the second half of the 20<sup>th</sup> century, the landscape from the liable to inundation part of the floodplain, between Calafat and the Jiu, has been modified 80-90%. The old morphology of the Danube Floodplain (with huge accumulations of mobile and immobile sands, with a chaotic relief of dunes placed in fascicles with depressions and marshy basins among them) preserved only in the non-embanked Ghidici - Ciuperceni sector.

Here, the permanent swamps Ciuperceni, Arcer, Lata, Țarova are still natural with vast reed beds and mixed woods with spontaneous vegetation, productive pastures, hayfields and steppe lawns with vegetation specific to sands. The rest of the territory, between Ghidici and the Jiu, was subject to the construction of the protection embankment of the Danube which was accompanied by blurry workings of the lowland areas, dishevelment workings of the landforms, change of former fields in agro-ecosystems, deforestation and replantation with acacia and poplar, climaxing with the disappearance of Rast lake and the reduction of Bistreț - Cârna - Nasta - Nedeia complex with a surface of about 22,000 ha to a fishing farm of about 2,000 ha.

Although, they are modified and reshuffled a lot, the ecosystems from the Danube Floodplain, between Calafat and the Jiu present a large scientific interest triggered by its geographical, hydrographical, pedological, climatological, flora and fauna particularities.

The ornithological importance of this territory consists in the fact that this is the route of migration of birds that fly along the river. The habitats from the sector Calafat - the Jiu, especially the aquatic ones, are points of great concentration of the migratory birds of world and European interest (RIDICHE & MURARIU, 2009; RIDICHE & KISS, 2011).

The program of identification of the avifauna areas, initiated by the BirdLife International and launched in our country in 1994 by the Romanian Ornithological Society (R.O.S.), was the premise of our study, regarding the inventorying and knowing of the distribution and dynamics of the bird species in the environment between Calafat and the Jiu. Our observations from 1995-1997 have contributed to the designation of Bistreț wetland as IBA (IBA RO 036), statute certificated by R.O.S. (\*\*1997) and by BirdLife International (HEATH & EVANS, 2000; BirdLife International, 2001).

After that, as a result of the documentations published by MUNTEANU (2004) and PAPP & FÂNTÂNĂ (2008), it is completed the IBA list, so that in the limits of the floodplain segment studied by us, there are two distinct areas

Calafat - Ciuperceni - the Danube (RO111) and the Jiu - the Danube Confluence (RO113) and it is reconfirmed IBA Bistreț (RO112); in the latest volume, IBA Bistreț is written with RO112 code.

In order to sustain the conservation of the avifauna from these areas, the most important ones have been integrated in Nature 2000 network sites, being designated Areas of Special Protection Avifauna (ASPAs) through H.G. No. 1284 / 2007 (Fig. 1).

**ASPAs Calafat - Ciuperceni - the Danube** (ROSPA 0013) has a total surface of 29,024 ha and includes the complex of aquatic, semiaquatic biotopes and terrestrial biotopes and from the non-embanked segment of the Danube Floodplain, from the south of Calafat - Ciuperceni - Desa - Poiana Mare - Piscu Vechi - Ghidici till the Danube - the sector included between the 760-714 river km. On the territory of the site, there are three protected natural areas of national interest (Ciuperceni - Desa, Lata Swamp, Black Swamp), declared through Law No. 5 / 2000 (RIDICHE 2008; RIDICHE et al., 2010).

**ASPAs Bistreț** (ROSPA 0010) includes the lake with the same name, with a total surface of 1,916 ha, being situated in the south of Dolj County (43°51'N 23°36'E), at about 4-5 km from the Danube, the access in the wet area being done through Calafat - Corabia road, along the Danube, with halts in every point from Bistreț, Plosca and Cârna.

Bistreț Lake represents the largest water stretch from the Danube Floodplain between "Porțile de Fier" and the Olt River mouth, and it is the result of the systematization of the old natural lakes from the Danube Floodplain (COTEȚ, 1957). The source of water of the lake is the Desnățui River and the drainage of water towards the Danube is made through Bârzogârla Channel (4-5 km).

The actual aquatic surface is arranged after fish working criteria, being divided through transversal embankments in six main basins that communicate between them through channels.

In Nature 2000 site there are included only the basins I-IV, but in our scientific intercessions, we propose the extension of the site on a surface of 21,552 ha, from the eastern point with the coordinates 43°49'35"N 23°45'35"E to the western point 43°51'12"N 23°14'44"E (Figs. 2 and 3). In the perimeter of the area proposed by us, there are the west, western basins of the lake, Călugăreni Swamp, the adjacent areas of the protection embankment of the Danube Floodplain and the meadow area of Rast, covered before systematization by Rast Lake, which is the communal pasture, today; in the east and south - the territories of the ex-complex Bistreț - Cârna - Nasta - Nedeia to the Danube, on which there are abandoned agricultural lands, old hills, semi-mobile dunes or sandy lands with xerophilous lawns, orchards, acacia woods. The areas included in the limits proposed by us and those proposed by PAPP & FĂNTÂNĂ (2008) represent about 4,600 ha and are intensely exploited agricultural surfaces, without ornithological importance. The area that we proposed is important for the nesting, shelter and food of many terrestrial and aquatic species of European interest, used as criteria for IBA and ASPA designation.

**ASPAs the Jiu - the Danube Confluence** (ROSPA0023) is situated on the Jiu River, in the area where the river flows into the Danube and it has a surface of 22,000 ha; the most representative biotopes of the site are the arable lands without irrigation (42.2%), deciduous forests (20.4%), pasture (11.8%) and wet areas (water - 7.2%, marshes - 6.5%); in the west of ASPA, there is a surface of about 550 ha with strong salty lands, from which 4 ha have been included in the list of protected areas (Law No. 5/2000), under the name of "Pajiștea halofilă Gighera"; this pasture is placed in an embanked area, coming through draining channels, where the water table oscillates between 0.2 and 1 m and the water has a high content of aerated salt, chlorides and sodium. The statute of this area allows the protection of the plant species and animals adapted to this type of habitat. Vegetal associations met on these salty lands or in their neighbourhood include some very rare species for our country flora (*Trifolium subterraneum*, *T. orithopodioides*) or less rare species (*Salicornia herbacea*, *Hordeum hystris*, *Chara fragilis*, *Lemna minor*, *L. gibbo*, *Pholiurus pannonicus*, *Heleocharis palustris*, *Juncus gerardi* etc.) - LAZĂR et al., 2001.

For IBA designation it has been taken into account, especially the endangered bird (A1 criterion), species with limited distribution in a biome (A3 criterion), migratory gregarious species during the passage, nestling or in hibernation period (A4 criterion), gregarious species of European importance (B1 criterion), species with an unfavourable conservation statute in Europe, species in numerical decline, vulnerable, rare or with limited nesting areas (B2 criterion); B3 criteria represents the species with a favourable conservation statute, but concentrated in Europe. Some species may represent many IBA criteria, for example *Pelecanus crispus* is a gregarious species with an unfavourable conservation statute in Europe and endangered in the world.

## MATERIAL AND METHODS

The avifaunistic list was written on the basis of the research and observations made by us in this area, starting with 1995 up to present and on the basis of the ornithological material drawn and preserved in the Museum of Oltenia patrimony (RIDICHE, 1999, 2004, 2007a, 2007b, 2010; RIDICHE & BĂLESCU, 2001; RIDICHE & ORZAȚĂ, 2004; RIDICHE & LICURICI, 2009; RIDICHE et al., 2006). The systematic order of the bird species was made after SZABÓ-SZELEY & BACZÓ (2006). The IBA designation criteria were taken after MUNTEANU (2004) and the protection statute of the species was established after the present legislation. In order to draw the maps regarding the special avifaunistic protection, we used Arc G.I.S. 9.3 program.

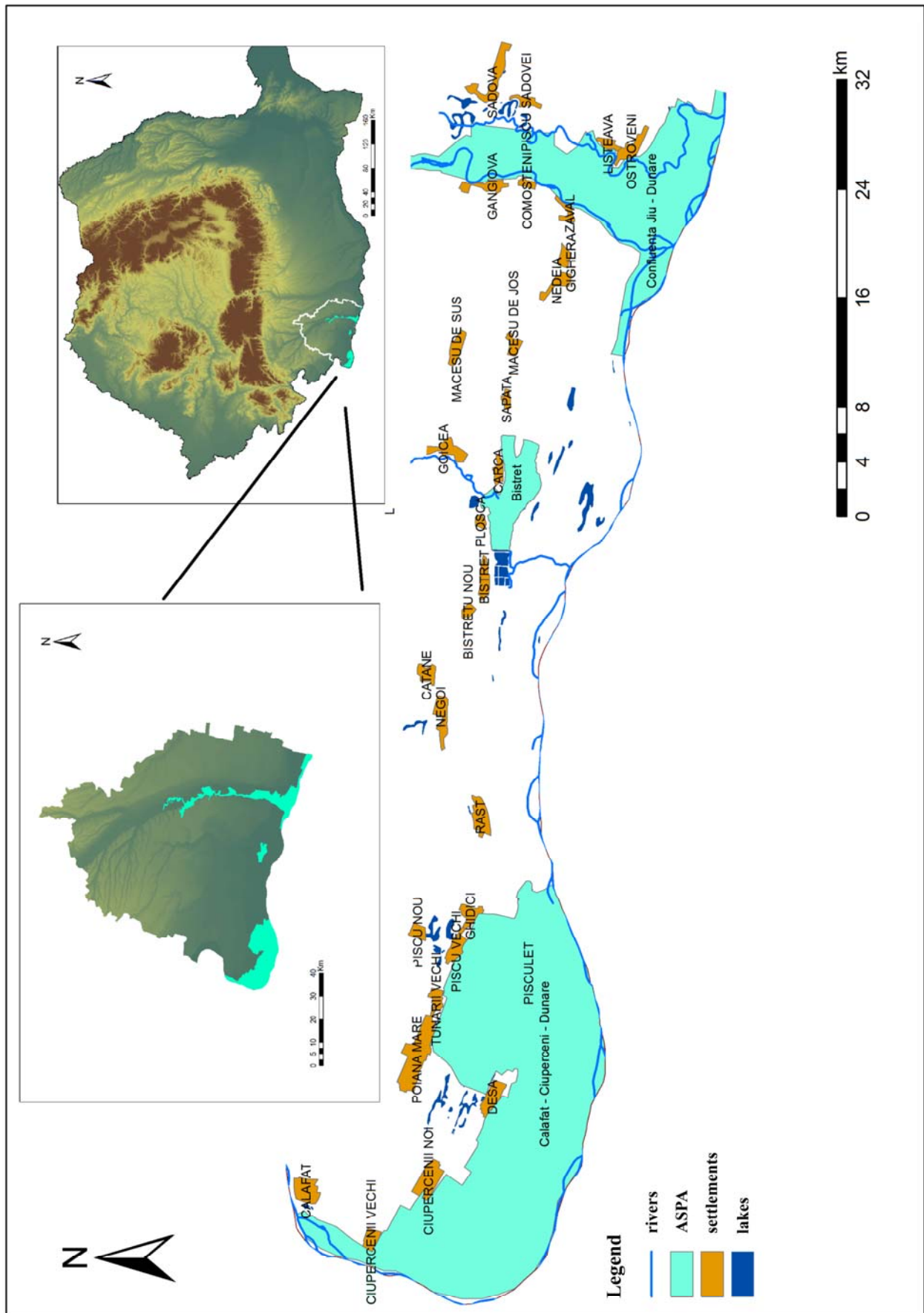


Figure 1. The areas of special avifaunistic protection (ASPAs) from the Danube Floodplain, the sector Calafat - the Jiu.  
 Figura 1. Ariile de protecție specială avifaunistică (APSA) din Lunca Dunării, sectorul Calafat - Jiu.

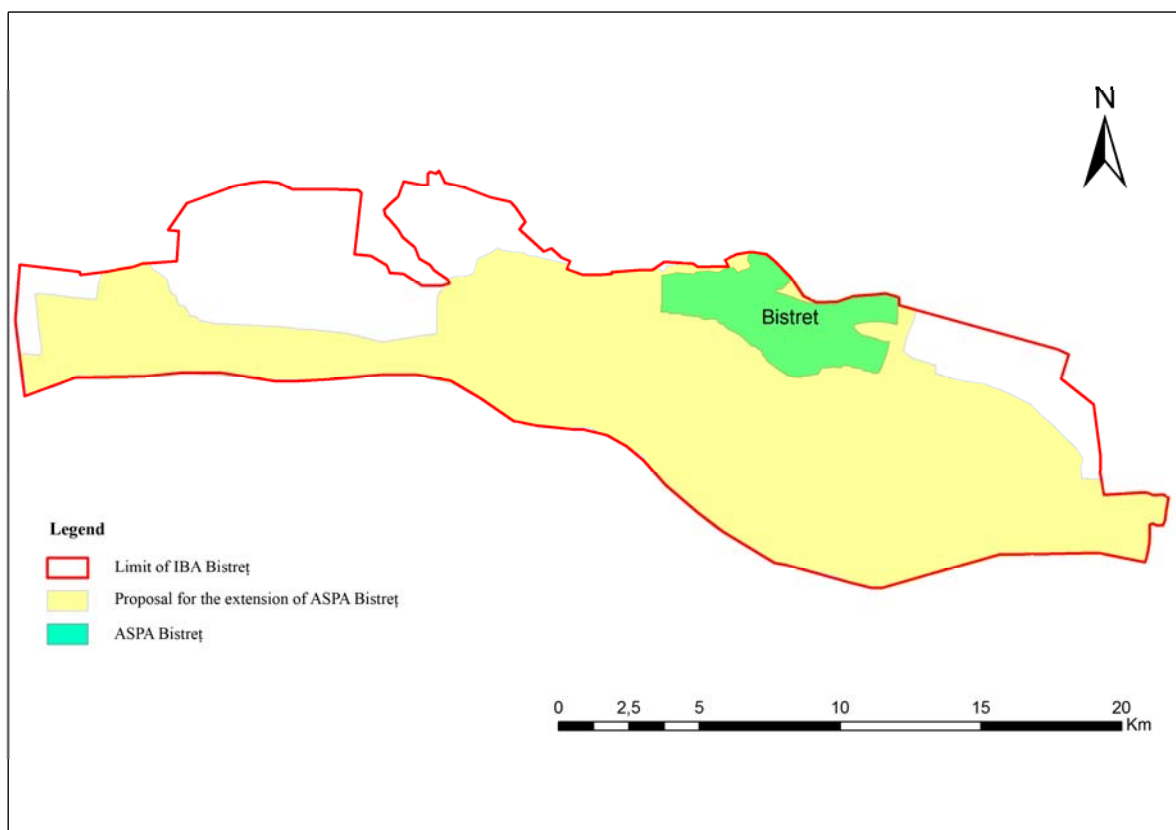


Figure 2. IBA limits, extension proposal of the ASPA and the existent ASPA.  
 Figura 2. Limite AIA, propunere extindere APSA și APSA existent.

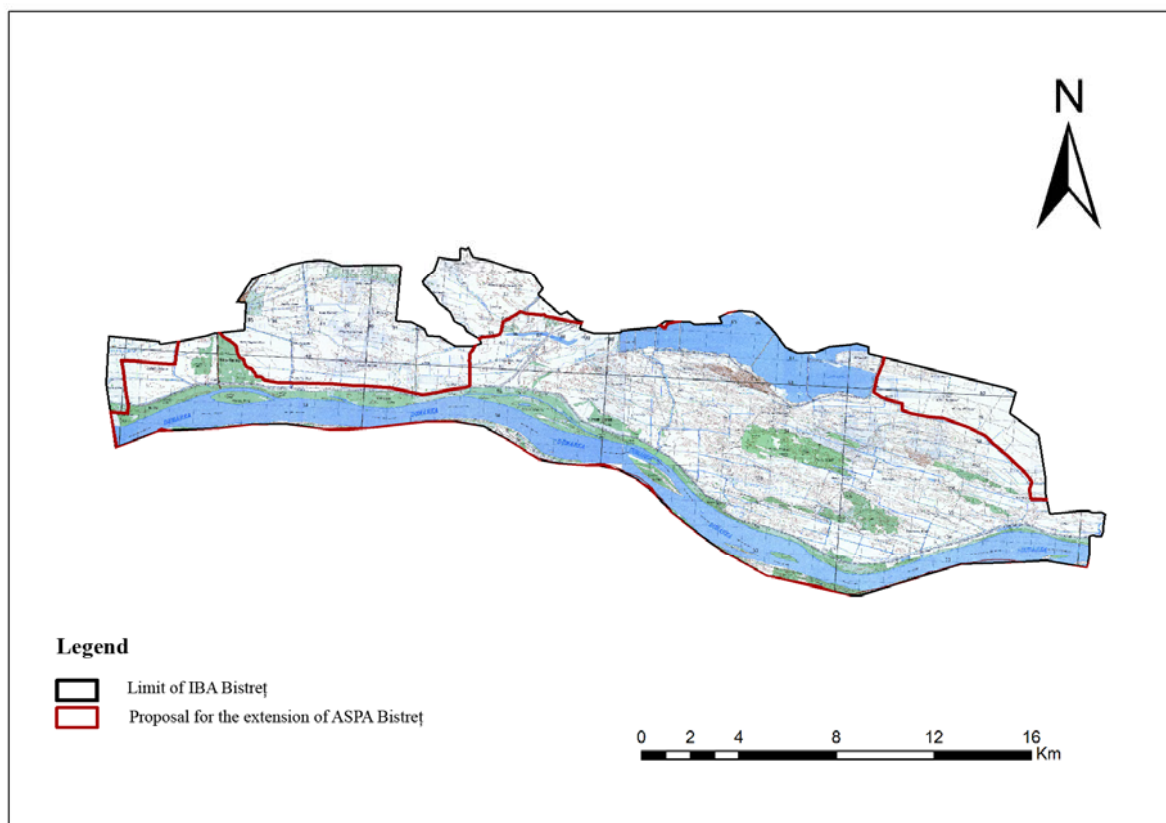


Figure 3. Topographical map with IBA Bistret limits and ASPA proposal of extension.  
 Figura 3. Harta topografică cu limitele AIA Bistret și propunerea de extindere APSA.

## RESULTS AND DISCUSSIONS

In Table 1 it can be seen: the avifauna list inventoried by us, the ecological types of bird species, the way of distribution in the sites of the studied territory, the AIA designation criteria and the protection statute of bird species both at national and European level.

The data gathered in the table may contribute to the improvement of the standard sheets of Nature 2000 sites that we referred to, through updating the list of species used for ASPA designation and at the same time it may stay contribute to the development of the managerial plans for the maintenance of the avifauna diversity.

A synthesis of the results regarding the qualitative and quantitative distribution of bird species in AIA/ASPA from the studied territory is rendered in figure 4.

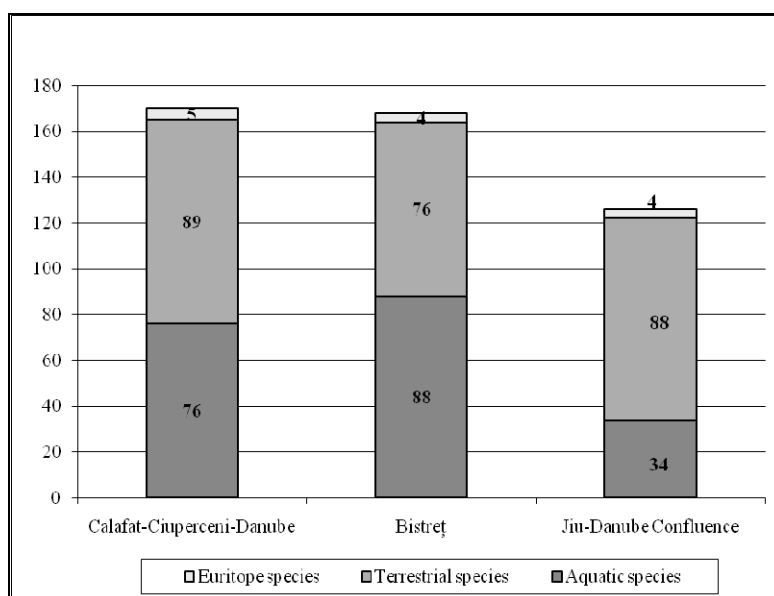


Figure 4. The graphic representation of the avifauna in IBA/ASPA, depending on the ecologic type.  
Figura 4. Reprezentarea grafică a avifaunei în AIA/APSA, în funcție de tipul ecologic.

According to the results from the Fig. 4, we observe:

1. in Calafat - Ciuperceni - the Danube site, we identify 170 species, that represent 89.47 % from the total inventoried avifauna, from these, 76 are aquatic species, 89 are terrestrial species, and 5 are eurytopic species.

2. in the area that we propose as IBA, respective ASPA Bistret, we have listed 168 species, that represent 88.42% from the total inventoried avifauna, from these 88 are aquatic species, 76 are terrestrial species and 4 are eurytopic. A large number of species of European interest (ex. *Haliaeetus albicilla*, *Buteo rufinus*, *Aquila pomarina*, *Burhinus oedicephalus*, *Sterna hirundo*, *Chlidonias hybrida*, *C. niger*, *Alcedo atthis*, *Coracias garrulus*, *Dendrocopos syriacus*, *Anthus campestris*, *Ficedula parva*, *Lanius collurio*, etc.) have been identified by us in the west, south and south-east surroundings of Nature 2000 site. These species satisfy at least one of the criteria of IBA designation and represent the scientific argument for which we consider necessary the extension, according to the limits previously mentioned.

3. in the Jiu - the Danube Confluence site and in its western neighbourhoods, we have identified 126 species, that represent 65.78% from the total catalogued avifauna, from these 34 are aquatic species, 88 are terrestrial species and 4 are eurytopic.

A simple comparison of the way of distribution discloses quality and quantity differences regarding the composition of the avifauna in those sites. These differences have been generated by physical-geographic and biotic factors: the configuration of the terrestrial and aquatic surfaces, the configuration of the substratum and banks of the aquatic basins, hydric regime and floods duration, eutrophication degree of swamps/lakes, the composition of the herbaceous and woody, vegetal associations, the quality and availability of the trophic sources, the presence of the atrophic factors.

From the aquatic species, the great majority, use trophic resources of the basins from Bistret and of the swamps and from the easy flooded area (Ciuperceni, Arcer, Lata, Lunga, etc.) and the shelter and nesting places of these, while in the Jiu - the Danube Confluence area, the presence of aquatic birds is considerably lower. In exchange, the situation is different in the case of the terrestrial species, which are much better represented in the Jiu - the Danube Confluence area and in the non-embanked floodplain between Ciuperceni and Ghidici. In these sites, the existence of the mixed woods and coppice on more extended areas determines a bigger density and a more intense frequency of some species: Accipitriformes, Falconiformes, Columbiformes, Strigiformes, Coraciiformes, Piciformes, Passeriformes Orders (Turdidae, Sylviidae, Muscicapidae, Paridae, Laniidae, Fringillidae, Emberizidae Families). At the same time,

the surfaces with wet pastures from these two sites, which are more isolated and less exposed to the anthropogenic factor, are determinant for the presence of *Crex crex*, which is a relatively rare summer guest in the mentioned areas.

From the point of view of the criteria used for the IBA designation, the situation is presented in this way (Fig. 5).

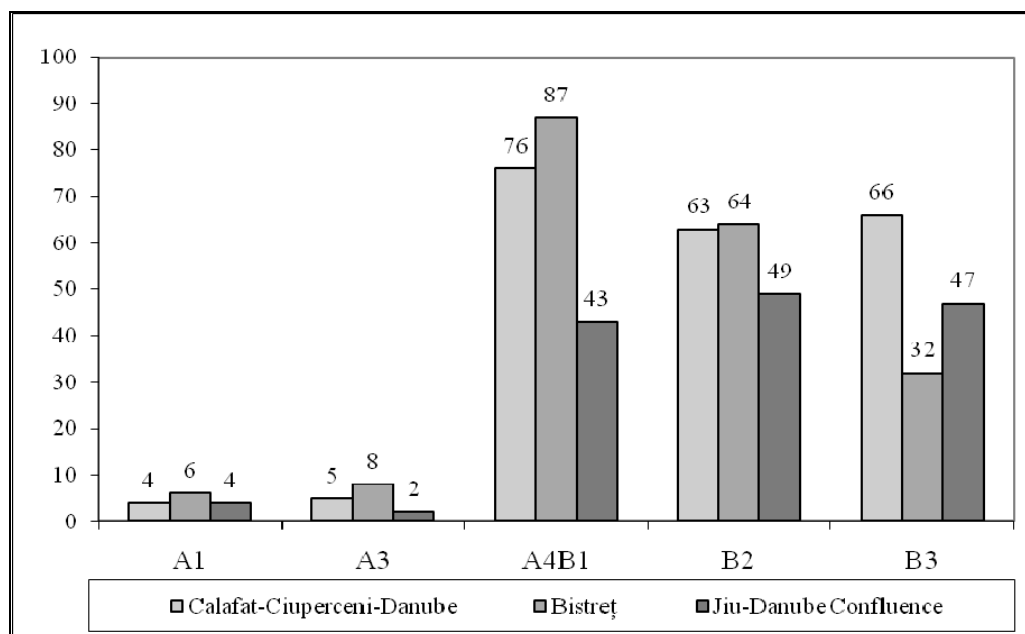


Figure 5. The distribution of the bird species qualified for IBA from the Danube Floodplain, in Calafat - the Jiu sector.

Figura 5. Distribuția speciilor de păsări calificate pentru AIA din Lunca Dunării, în sectorul Calafat - Jiu.

A1 criterion species have the best representation in Bistreț site - 6 species: *Anser erythropus*, *Branta ruficollis* accidentally winter guests, *Pelecanus crispus* - passage species, relatively constant and sometimes numerous, *Phalacrocorax pygmaeus* - numerous in passage and *Aythya nyroca* - summer guest, frequently nesting, *Haliaeetus albicilla* - rare species looking for food; in Calafat - Ciuperceni - the Danube site, we identified 4 species in danger in the world (*Phalacrocorax pygmaeus* and *Aythya nyroca*, frequently nesting, rare *Haliaeetus albicilla* and *Crex crex* - summer nesting guest, but less frequent), three of these (*Phalacrocorax pygmaeus*, *Haliaeetus albicilla*, *Crex crex*) being found as nesting species in the Jiu - the Danube Confluence area, at which it is added *Pelecanus crispus*.

A3 criterion species are 8 in Bistreț site (4 winter quests and/or passage species - *Anser albifrons*, *A. erythropus*, *Mergus albellus*, *Buteo lagopus* and 4, exclusively passage species: *Pluvialis squatarola*, *Calidris minuta*, *C. temminckii*, *Tringa erythropus*), 5 in ASPA Calafat - Ciuperceni - Danube (*Anser albifrons*, *Mergus albellus*, *Buteo lagopus*, *Calidris minuta*, *Tringa erythropus*) and in ASPA the Jiu - the Danube Confluence we have noticed the least species with restrictive biome (*Anser albifrons*, *Buteo lagopus*), noticed in passage or as winter guests.

A4B1 criterion species are the best representative category in Bistreț site (87 species) and Calafat - Ciuperceni - the Danube site (76 species) while in the Jiu - the Danube Confluence site, we have identified 43 species. This category includes the majority of the aquatic birds (Podicediformes, Pelecaniformes, Ciconiiformes, Anseriformes and Charadriiformes Orders) and some terrestrial species (Accipitriformes, Falconiformes, Coraciiformes - *Merops apiaster* and Passeriformes - *Riparia riparia* Orders). The most numerous concentration of these species is in spring - autumn passage period, especially in Bistreț site; some species form nesting colonies in the habitat of the studied area (*Phalacrocorax pygmaeus*, *Nycticorax nycticorax*, *Ardeola ralloides*, *Egretta garzetta*, *Platalea leucorodia*, *Glareola pratincola*, *Himantopus himantopus*, *Recurvirostra avosetta*, *Vanellus vanellus*, *Tringa totanus*, *Larus ridibundus*, *Sterna hirundo*, *S. albifrons*, *Chlidonias hybrida*, *C. niger*, *Merops apiaster*, *Riparia riparia*), and others (especially Anatidae and Phalacrocoracidae) make constant crowds during winter with bigger or smaller effectives depending on the existent climatic conditions and on the availability of trophic resources.

Criterion B2 species are equally distributed in Calafat - Ciuperceni - the Danube site (63 species, from which 28 are aquatic, 32 are terrestrial and 3 are eurytopic) and in Bistreț (64 species, from which 32 are aquatic, 29 terrestrial and 3 are eurytopic), while in the Jiu - the Danube Confluence site, we identified 49 species, disadvantaged from the point of view of conservation in Europe; from these, 15 are aquatic, 31 are terrestrial and 3 are eurytopic.

Some species of criterion B2 frequent with equal or different intensity all the sites from the studied territory: the majority of the Ciconiiformes (*Ixobrychus minutus*, *Nycticorax nycticorax*, *Ciconia* sp., *Plegadis falcinellus* and *Platalea leucorodia*), the majority of the diurnal birds of prey (*Circus cyaneus*, *Buteo rufinus*, *Aquila pomarina*, *F. tinnunculus*), galinacee (*Perdix perdix*, *Coturnix coturnix*), some waders birds (*Philomachus pugnax*, *Scolopax rusticola*, *Numenius arquata*, *Tringa totanus*, *T. glareola*), some Lariformes (*Larus minutus* and *L. canus*) and Sternide (*Sterna albifrons*, *S. hirundo*), *Streptopelia turtur*, *Cuculus canorus*), Strigiformes (*Tyto alba*, *Otus scops*, *Athene noctua*), Coraciiformes (*Alcedo atthis*, *Merops apiaster*, *Coracias garrulus*), some Piciformes (*Picus viridis*,

*Dendrocopos syriacus*) and Passeriformes (*Galerida cristata*, *Alauda arvensis*, *Riparia riparia*, *Hirundo rustica*, *Anthus campestris*, *Phoenicurus phoenicurus*, *Hippolais* sp., *Muscicapa stia*, *Ficedula parva*, *Lanius* sp., *Emberiza hortulana*). Others have been identified by us only in the wet areas and their surroundings from Bistreț and Calafat - Ciuperceni - the Danube sites (*Botaurus stellaris*, *Ardeola ralloides*, *Ardea purpurea*, *Anas strepera*, *A. acuta*, *A. querquedula*, *Mergus albellus*, *Falco columbarius*, *Himantopus himantopus*, *Recurvirostra avosetta*, *Charadrius alexandrinus*, *Calidris alpina*, *Limosa limosa*, *Chlidonias hybrida*, *C. niger*); some species of B2 criterion have been identified only at Bistreț (*Pelecanus onocrotalus*, *Glareola pratincola*, *Calidris ferruginea*, *Sterna caspia*) or in the mixed woods from the Jiu - the Danube Confluence area and in Calafat - Ciuperceni - the Danube Flooded area (*Falco vespertinus*, *Jynx torquilla*, *Picus canus* și *Dryocopus martius*).

A great number of the populations of B2 species nests in the studied territory.

B3 criterion species do not have problems regarding the conservation throughout Europe; there have been inventoried 66 species in Calafat - Ciuperceni - the Danube site, 32 in Bistreț area, 47 in the Jiu - the Danube Confluence sit. Most of these species belong to Passeriformes and nest in the studied areas.

From the point of view of protective legislation analysed by us the repartition of the species is rendered in figure 6.

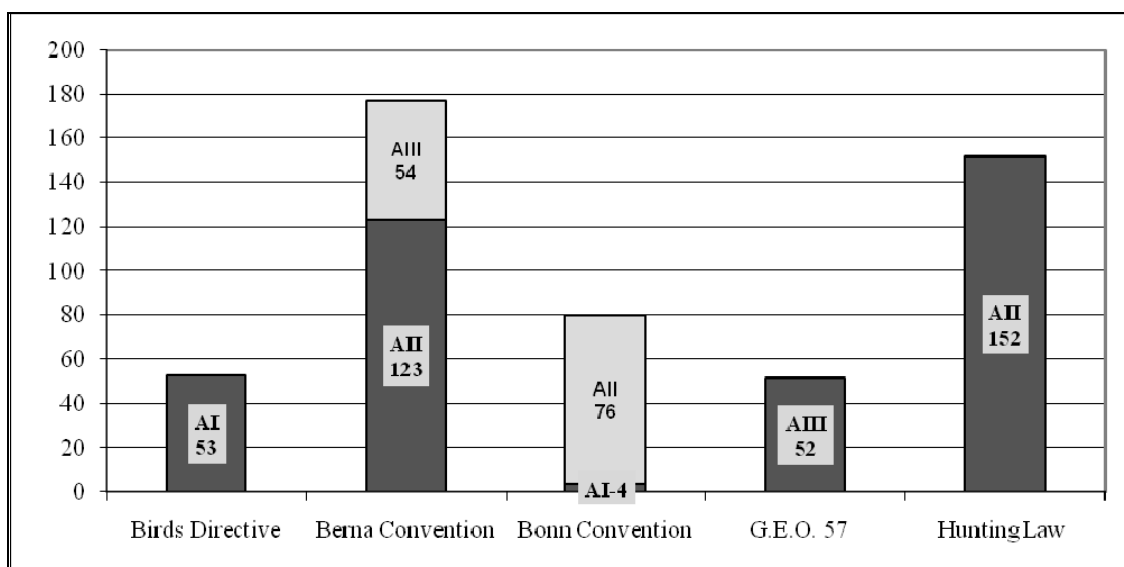


Figure 6. The graphic repartition of the avifauna from the Danube Floodplain (Calafat - the Jiu sector), from the point of view of the protection statute.

Figura 6. Repartizarea grafică a avifaunei din Lunca Dunării (sectorul Calafat - Jiu), din punct de vedere al statutului de protecție.

- 53 species need measures of conservation regarding the habitat, according to Birds Directive of Europe Council;

- 123 species are strictly protected according to 2<sup>nd</sup> Annex (AII) and 54 species are protected according to 3<sup>rd</sup> Annex (AIII) from Law No. 13/1993 for Romania adhesion to the Convention regarding the conservation of wildlife and natural habitats from Europe, adopted at Berne on 19<sup>th</sup> September 1979;

- 4 migratory species with unfavourable state of conservation for which the countries must assure immediate protection (AI/1<sup>st</sup> Annex) and 76 migratory species with unfavourable state of conservation for which the countries must assure conservation and management (AII) according to Law No. 13/1998 for Romania adhesion to the Convention regarding the conservation of the migratory species from wild animals, adopted at Bonn on 23<sup>rd</sup> June 1979;

- 52 species are written in the 3<sup>rd</sup> Annex (AIII) of Government Emergency Ordinance No. 57 /2007, according to which the conservation of these needs the designation of the special areas of conservation and of avifaunistic special protection areas (ASPAs);

- 152 species are forbidden for hunting according to the 2<sup>nd</sup> Annex (AII) of Law No. 407/2006 - Hunting Law; according to the 1<sup>st</sup> Annex (AI) of Hunting Law, 33 species may be taken from nature, after it is established a quantum of compensatory financing by the authorized organisms.

Some of the species present in the studied areas (*Pelecanus onocrotalus*, *P. crispus*, *Egretta alba*, *E. garzetta*, *Platalea leucorodia*, *Tadorna tadorna*, *Recurvirostra avosetta*, *Himantopus himantopus*) have statute of Nature Monuments and are included in the Red List of vertebrates from Romania (MUNTEANU, 2005).

Because the great majority of the bird species analysed by us have an unfavourable state of conservation throughout Europe and are under the incidence of many laws and of Birds Directive, it is necessary an adequate management of protection of the ecosystems from the studied territory, ecosystems included in Nature 2000 sites network (\*\*\*) (2007).

## CONCLUSIONS

The majority of the bird species from this area represents the subject of the measures of conservation, imposed at European level, thus the results of personal research, together with the ones of other specialists lie at the basis of identification of three IBA designated as ASPA (Nature 2000 sites) through H.G. No.1284/24.10.2007.

We propose and sustain with scientific arguments the ASPA extension to a surface of about 21,552 ha, which will assure protection for the species with unfavourable state of conservation, identified outside the Nature 2000 site (1,916 ha).

As far as the qualitative and quantitative distribution of the bird species in IBA/ASPA from the studied territory is concerned, we have the following situation:

- in Calafat - Ciuperceni - the Danube site, we have identified 170 species, of which 75 are aquatic species, 90 are terrestrial species and 5 eurytopic species;

- in the area proposed as ASPA Bistreț, there are 169 species, of which 89 are aquatic species, 76 are terrestrial species and 4 are eurytopic species;

- in the Jiu - the Danube Confluence area we registered 125 species, of which 33 are aquatic species, 88 are terrestrial species and 4 are eurytopic species;

According to the criteria used for IBA designation, the situation is as it follows:

- in Calafat - Ciuperceni - the Danube site, we identified 4 species A1 criterion, 5 species criterion A3, 76 species criterion A4B1, 64 species criterion B2 and 66 species criterion B3;

- in Bistreț site and in its surroundings (proposed for their including in Nature 2000) we have identified 6 species criterion A1, 8 species criterion A3, 88 species criterion A4B1, 64 species criterion B2 and 32 species criterion B3;

- in the Jiu - the Danube Confluence site we have identified 3 species criterion A1, 2 species criterion A3, 42 species criterion A4B1, 48 species criterion B2 and 47 species criterion B3.

The majority of the bird species analysed by us are under the incidence of national and international laws and conventions and of Birds Directive, and this fact implies the adoption of an adequate management of protection of the studied area.

Seven of the studied bird species are Nature Monuments (*Pelecanus onocrotalus*, *P. crispus*, *Egretta alba*, *E. garzetta*, *Platalea leucorodia*, *Tadorna tadorna*, *Himantopus himantopus*).

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Table 19. The avifauna list from the Danube floodplain, between Calafat and the river Jiu, the ecologic type, the distribution of the species, IBA designation criteria and the protection statute of the birds species. / Tabel 19. Lista avifaunei din Lunca Dunării, dintre Calafat și râul Jiu, tipul ecologic, distribuția speciilor, criteriile de desemnare a IBA și statutul de protecție al speciilor de păsări.

No.	Species	Ecologic type	Distribution in IBA and/or ASPA			IBA Criteria	Protection statute				
			Calafat – Ciuperceeni – the Danube	Bistret	the Jiu–the Danube Confluence		Birds Directive (Annex I)	Berna Conv.	Bonn Conv.	G.E.O. 57	Hunting Law
1.	<i>Tachybaptus ruficollis</i> (PALLAS, 1764)	Acv.	+	+	+	A4/B1	-	AII	-	-	AII
2.	<i>Podiceps cristatus</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AIII	-	-	AII
3.	<i>Podiceps griseogen</i> (BODDAERT, 1783)	Acv.	+	+	+	A4/B1	-	AII	AII	-	AII
4.	<i>Podiceps nigricollis</i> C.L. BREHM, 1831	Acv.	+	+	+	A4/B1	-	AII	-	-	AII
5.	<i>Phalacrocorax carbo</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AIII	-	-	AI
6.	<i>Phalacrocorax pygmaeus</i> (PALLAS, 1773)	Acv.	+	+	+	A1, A4/B1	AI	AII	AII	A III	AII
7.	<i>Pelecanus onocrotalus</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1, B2	AI	AII	AI	A III	AII
8.	<i>Pelecanus crispus</i> BRUCH, 1832	Acv.	+	+	+	A1, A4/B1, B2	AI	AII	AI	A III	AII
9.	<i>Botaurus stellaris</i> (LINNAEUS, 1758)	Acv.	+	+	+	B2	AI	AII	AII	A III	AII
10.	<i>Isobrychus minutus</i> (LINNAEUS, 1766)	Acv.	+	+	+	B2	AI	AII	AII	A III	AII
11.	<i>Nycticorax nycticorax</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1, B2	AI	AII	-	A III	AII
12.	<i>Ardeola ralloides</i> (SCOPOLI, 1769)	Acv.	+	+	+	A4/B1, B2	AI	AII	-	A III	AII
13.	<i>Bubulcus ibis</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AII	-	-	AII
14.	<i>Egretta garzetta</i> (LINNAEUS, 1766)	Acv.	+	+	+	A4/B1	AI	AII	-	A III	AII
15.	<i>Egretta alba</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	AI	AII	AII	A III	AII
16.	<i>Ardea cinerea</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1	-	AIII	-	-	AII
17.	<i>Ardea purpurea</i> LINNAEUS, 1766	Acv.	+	+	+	B2	AI	AII	AII	A III	AII
18.	<i>Ciconia nigra</i> (LINNAEUS, 1758)	Ter.	+	+	+	A4/B1, B2	AI	AII	AII	A III	AII
19.	<i>Ciconia ciconia</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1, B2	AI	AII	AII	A III	AII
20.	<i>Plegadis falcinellus</i> (LINNAEUS, 1766)	Acv.	+	+	+	A4/B1, B2	AI	AII	-	A III	AII
21.	<i>Platalea leucorodia</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1, B2	AI	AII	AII	A III	AII
22.	<i>Cygnus olor</i> (GMELIN 1789)	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AII
23.	<i>Cygnus cygnus</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	AI	AII	AII	A III	AII
24.	<i>Anser fabalis</i> (LATHAM, 1787)	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AII
25.	<i>Anser albifrons</i> (SCOPOLI, 1769)	Acv.	+	+	+	A3, A4/B1	-	AIII	AII	-	AI
26.	<i>Anser erythropus</i> (LINNAEUS, 1758)	Acv.	+	+	+	A1, A3, A4/B1	AI	AII	AII	A III	AII
27.	<i>Anser anser</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI
28.	<i>Branta ruficollis</i> (PALLAS, 1769)	Acv.	+	+	+	A1, A4/B1	AI	AII	AI	A III	AII
29.	<i>Tadorna tadorna</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AII	AII	-	AII
30.	<i>Anas penelope</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI
31.	<i>Anas strepera</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1, B2	-	AIII	AII	-	?
32.	<i>Anas crecca</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI
33.	<i>Anas platyrhynchos</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI
34.	<i>Anas acuta</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1, B2	-	AIII	AII	-	AI
35.	<i>Anas querquedula</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1, B2	-	AIII	AII	-	AI
36.	<i>Anas clypeata</i> LINNAEUS, 1758	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI
37.	<i>Netta rufina</i> (PALLAS, 1773)	Acv.	+	+	+	A4/B1, B2	-	AIII	AII	-	AII
38.	<i>Aythya ferina</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1, B3	-	AIII	AII	-	AI
39.	<i>Aythya nyroca</i> (GÜLDENSTÄDT, 1770)	Acv.	+	+	+	A1, A4/B1	AI	AIII	AII	A III	AII
40.	<i>Aythya fuligula</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI
41.	<i>Bucephala clangula</i> (LINNAEUS, 1758)	Acv.	+	+	+	A4/B1	-	AIII	AII	-	AI







189.	<i>Emberiza schoeniclus</i> (LINNAEUS, 1758)	Acv.	+	+	+		B3	-	AII	-	AII
190.	<i>Emberiza calandra</i> LINNAEUS, 1758	Ter.	+	+	+		B3	-	AIII	-	AII

**Legend:**

**Ecologic type:** Acv. - aquatic; Ter. - terrestrial; Eur. - euritope.

**IBA Criteria:** A1 - species in danger in the world (species of conservative interest); A3 - species with limited distribution in a biome/restrictive biome species; A4 - gregarious species during the passage, nesting or wintering period; B1 - gregarious species of European importance; B2 - species with unfavourable conservation statute in Europe (species in numerical decline, vulnerable, rare or with small nesting areas); B3 - species with favourable conservation statute in Europe.

**Birds Directive:** AI - Annex I - species that are the subject of special conservation measures regarding the habitat.

**Berna Conv. (Convention):** AII - Annex II - strictly protected fauna species; AIII - Annex III - protected fauna species.

**Bonn Conv. (Convention):** 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 / 2007: 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:** AII - Annex II - wild fauna of hunting interest, at which hunting is forbidden; AI - Annex I - wild fauna of hunting interest at which hunting is allowed in some periods.

**Legendă:**

**Tip ecologic:** Acv. - acvatic, Ter. - terestru; Eur. - euritop.

**Criterii IBA:** A1 - specii amenințate pe plan global (specii de interes conservativ global); A3 - specii cu distribuție limitată într-un biom/specii de biom restrictiv; A4 - specii gregare în timpul pasajului, cuibăritului sau în perioada de iernare; B1 - specii gregare, de importanță europeană; B2 - specii cu statut de conservare nefavorabil în Europa (specii în declin numeric, vulnerabile, rare sau cu ani de cuibărit restrânse); B3 - specii cu statut de conservare favorabil în Europa.

**Directiva Păsări:** AI - Anexa I - specii care fac obiectul măsurilor speciale de conservare privind habitatul.

**Conv. (Convenția) Berna:** AII - Anexa II - specii de faună strict protejate; AIII - Anexa III - specii de faună protejate.

**Conv. (Convenția) Bonn:** AI - Anexa I - specii migratoare cu stare de conservare nefavorabilă, pentru care statele trebuie să asigure protecția imediată; AII - Anexa II - specii migratoare cu stare de conservare nefavorabilă, pentru care statele trebuie să asigure conservarea și gestionarea.

**O.U.G. 57:** Ordonanță de urgență nr. 57 / 2007: AIII - Anexa 3 - specii de plante și de animale a căror conservare necesită desemnarea arilor speciale de conservare și a arilor de protecție specială avifaunistică.

**Legea Vânătorii 407 / 2006:** AII - Anexa II - fauna sălăbatică de interes vânătoresc la care vânătoarea este interzisă; AI - Anexa I - fauna sălăbatică de interes vânătoresc la care vânătoarea este permisă în anumite perioade.