

Birds in Ponor Special Protection Area (Natura 2000), Western Bulgaria: Composition, Conservation Status and Changes over the Last 30 Years

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Abstract: The avifauna in Ponor Special Protection Area within the Bulgarian Natura 2000 ecological network was studied in terms of its composition, conservation status and changes over the last 30 years. A total of 189 bird species have been recorded so far in the study area; 120 species were breeding, 56 were observed during migration passage and wintering, 11 were vagrants and 2 species were with unclear status. Eight species no longer breed in the area: Egyptian Vulture (*Neophron percnopterus*), Griffon Vulture (*Gyps fulvus*), Eastern Imperial Eagle (*Aquila heliaca*), Levant (*Accipiter brevipes*), Saker Falcon (*Falco cherrug*), Woodcock (*Scolopax rusticola*), White Stork (*Ciconia ciconia*) and Stock Dove (*Columba oenas*). Five species were found to breed in the area within the last 15 years: Tangmalm's Owl (*Aegolius funereus*), Isabelline Wheatear (*Oenanthe isabellina*), Tawny Pipit (*Anthus campestris*), Marsh Warbler (*Acrocephalus palustris*) and Black-headed Bunting (*Emberiza melanocephala*). Changes in the composition and threats for the species subject of designation of the protected zone are discussed and management implications are proposed.

Keywords: Bird Fauna, Important Bird Area, Nature Conservation, Stara Planina

Introduction

Ponor (43°3'46"N, 23°10'23"E) is a Special Protection Area (SPA) located ca. 50 km north-west to Sofia. It is part of the Western Stara Planina mountain range (KOSTADINOVA, GRAMATIKOV 2007). The diversity of forest and grassland habitats (DIMITROV, PETROVA 2014; TZONEV *et al.*, 2014), the mosaic landscape and extensive elevation range (ca. 390–1600 m; MOEW 2011) as well as the location of the site along *Via Aristotelis* migration route (MICHEV *et al.* 2012) determine its rich avifauna. Until 2000, only fragmentary data on particular bird species in the area were published (REIZER 1894, HARRISON 1933, PATEV 1950, SIMEONOV 1967, DONCHEV 1970, BAUMGART *et al.* 1973, FISHER *et al.* 1975, SIMEONOV, MICHEV 1980, 1985, STOYANOV, KOCEV 1985, MICHEV *et al.* 1986,

BAUMGART 1987, MICHEV *et al.* 1989, DELOV 1995, PETROV *et al.* 1996). After this period, intensive research in the area was conducted that provided detailed information on the checklist of the avifauna (STOYANOV 2001, NIKOLOV 2006), distribution and numbers of breeding species (NIKOLOV, VASSILEV 2003, 2004) and some rare or protected species and their habitats (NIKOLOV 2003, 2010, STOYANOV *et al.* 2008). Recent data on the avifauna in Ponor SPA are also available in nation-wide bird surveys (KOSTADINOVA, GRAMATIKOV 2007, IANKOV 2007, GOLEMANSKI *et al.* 2011). However, still there is a need to review and to present the current status and recent changes of the avifauna at the site, and thus to contribute for adequate Natura 2000 network management.

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Our study aims to compile the published ornithological information for Ponor SPA, and to explore the changes in the composition and numbers of breeding birds for the last 30 years. Emphasis is made on extinct species or those with a strong negative trend, recent invaders and species of conservation concern, i.e. species for which the protection area is of high importance at the global and (or) European level (*sensu* KOSTADINOVA, GRAMATIKOV 2007, MOEW 2011). Main threats for the local avifauna are discussed in view of more efficient conservation management of the site.

Methods

Study area

The area of Ponor SPA is 314 km², with boundaries outlined in the east by the deep gorge of Iskar River, in the south by Kozle and Iskretska Rivers, in the west it follows the state border between the village of Burlya to the villages of Vrudlovtsi and Cheparlintsi, in the north it borders the Koznitsa Range of the main Stara Planina mountain chain (KOSTADINOVA, GRAMATIKOV 2007, MOEW 2011). The area covers mainly open grassy terrains with calciphilous and mesophyte vegetation (TZONEV *et al.*, 2014). The forests are mainly broadleaved, dominated by *Fagus*, *Carpinus* and *Quercus* formations (DIMITROV, PETROVA 2014). Cliffs, rocky crests and stony karst terrains are abundant in the area, which impedes the agricultural cultivation and the land use is related mainly to grazing and mowing.

Data collection and interpretation

For the compilation of the overall bird list in Ponor SPA, a thorough review of published information related to this region was carried out. The changes in breeding avifauna were evaluated based on a comparison between two periods: (1) from the late 19th century (when first data for the region were published) until 1980; and (2) from 1980 until 2010. For the first period only published data was considered, while for the second period unpublished data collected more systematically during breeding seasons (BSPB, unpublished data) were considered as well. The study area was divided into 110 2×2 km squares based on the Universal Transverse Mercator (UTM) grid following POPGEORGIEV *et al.* (2014). Each square was visited at least twice during the period March–July 2008–2009 and all macro-habitats within a square were visited. All birds registered visually and by sound were recorded, and breeding probability was assessed according to HAGEMEJER, BLAIR (1997). Birds of prey were studied following NIKOLOV (2008).

Conservation Status

The conservation status of birds for Bulgaria was considered based on the Annexes to the Biodiversity Protection Act of Bulgaria (2002, lastly modified in 2013). The international conservation status refers to: (1) SPEC categories (TUCKER, HEATH 1994) – species of European conservation concern, identified on the basis of criteria in compliance with their global and European status, and, proportionally, with the dimensions of the part of their range situated in Europe; (2) Species listed in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention); (3) The IUCN Red List of Threatened Species; (4) The European Threat Status of birds (TUCKER, HEATH 1994); (5) Species listed in the European Union Birds Directive (Directive 2009/147/EC); (6) Species listed in the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Results

Species composition and conservation status

The avifauna of Ponor SPA consisted of 189 species: 120 breeding as in 2010, 56 species present during migration passage and wintering, 11 vagrant species and 2 species with unclear status (*Annex*). Regarding the conservation status, 73 species were of European conservation concern (SPEC), 6 amongst them belonging to the category SPEC1, 22 to SPEC2 and 45 species to SPEC3. Seven species were of those listed in the IUCN Red List of Threatened Species: 4 Near Threatened, 1 Vulnerable and 2 Endangered. According to the European threat status of birds, 5 of the recorded species were Endangered, 17 were Vulnerable, 8 were Rare, 31 were Declining and 6 were historically declining. Of species recorded in the SPA, 50 belonged to species listed in Annex I of Council Directive 2009/147/EC on the conservation of wild birds, 71 were included in the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), 186 species in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and 166 in the Bulgarian Biological Diversity Act.

Changes in the breeding avifauna for the last 30 years

By 1980, five species (Egyptian Vulture *Neophron percnopterus*, Griffon Vulture *Gyps fulvus*, Eastern Imperial Eagle *Aquila heliaca*, Levant Sparrowhawk *Accipiter brevipes* and Woodcock *Scolopax rusticola*) have gone extinct as breeders in Ponor SPA,

while three more species (White Stork *Ciconia ciconia*, Saker Falcon *Falco cherrug* and Stock Dove *Columba oenas*) have gone extinct as breeders in the last 30 years. Five species (Tangmalm's Owl *Aegolius funereus*, Isabelline Wheatear *Oenanthe isabellina*, Tawny Pipit *Anthus campestris*, Marsh Warbler *Acrocephalus palustris* and Black-headed Bunting *Emberiza melanocephala*) were found as breeders in the study area during the last 15 years. For the species, which persist in the area, five species (Rock Partridge *Alectoris graeca*, Corncrake *Crex crex*, Collared Dove *Streptopelia decaocto*, Jackdaw *Corvus monedula* and Alpine Chough *Pyrrhonorax graculus*) showed declines in the local distribution and numbers. For three species (Long-legged Buzzard *Buteo rufinus*, Red-rumped Swallow *Hirundo daurica* and Raven *Corvus corax*) the opposite trend was observed.

Discussion

Composition and dynamics of the avifauna

There is a relatively high number of bird species in Ponor SPA compared to other mountainous areas in western Bulgaria with similar size: e.g. Vitosha (236 species), Konyavska Mountain (178 species), Pirin (177 species), Ograzhden (166 species), Vrachanski Balkan (154 species), Vasiljovska Mountain (153 species), Ljulin Mountain (137 species), Lozenska Mountain (127 species) and Osogovska Mountain (126 species), (GEORGIEV, ALEXANDROV 1988, SIMEONOV, BAEVA 1988, SIMEONOV, DELOV 1989, DIMITROV 1991, SIMEONOV, MARINOV 1994, SHURULINKOV, HRISTOV, 2001, MILCHEV, GEORGIEV 1998, POPOV *et al.* 2005). The area is considered as a site of global importance for the Corncrake (*Crex crex*), and one of the most important Natura 2000 sites in the country for the Long-legged Buzzard, Golden Eagle (*Aquila chrysaetos*), Eagle Owl (*Bubo bubo*), Grey-headed Woodpecker (*Picus canus*), Woodlark (*Lullula arborea*), Barred Warbler (*Sylvia nisoria*) and Red-backed Shrike (*Lanius collurio*) (KOSTADINOVA, GRAMATIKOV 2007).

The extinction of the two species of vultures as breeders in the past century is related to their long-term population declines and decrease of the range at the national and Balkan levels, which resulted from diverse negative factors such as illegal poisoning, decline in availability of livestock carcasses, direct persecution and others (DEMERDZHIEV *et al.* 2014, VELEVSKI *et al.* 2015). The situation with the Saker Falcon is similar, which suffers from national-wide severe decline in the population and the species is almost extinct as breeding in Bulgaria

(RAGYOV *et al.* 2014). Although there is an overall increase of the Eastern Imperial Eagle population in the country, the loss of breeding localities in Ponor SPA is in line with the abandonment of most of the breeding territories in the Stara Planina range in the past century (DEMERDZHIEV *et al.* 2011). Most of the threats for the species in the past were related to direct persecution, intentional poisoning and changes in the traditional farming practices. For both the Saker Falcon and Eastern Imperial Eagle, shortage of food availability should not be considered as substantial negative driver at the SPA, as an abundant population of European Sousek (*Spermophilus citellus*) exists (KOSHEV 2014), which is a main prey for both species. Regarding the Corncrake, a total of 27 calling males were reported in the 1990s only for the area of Zimevitsa wet meadows (ca. 500 ha, DELOV 1995) and even the average abundance was lower than this in Sofia region as a whole; currently the abundance of population is lower. The species is associated with wet and relatively tall grassland vegetation (NIKOLOV 2010) and the timing and method of mowing are of great importance for the survival of the species (PEDRINI *et al.* 2012). Moreover, the long-term abandonment of pastures and meadows and the resulting development of shrubby and woody vegetation in grasslands and the conversion of semi-natural grasslands to arable lands are known to have a strong negative effect on the species (IANKOV 2007). The decrease in the distribution and decline in numbers of Jackdaw in Ponor SPA is related to the shift in the distribution from wild rocky areas to settlements (the species is not so common in upland settlements), which is a general pattern of the national population for the past century (IANKOV 2007). The population decline of Alpine Chough was observed in the whole Western Stara Planina region; the main reason for this was considered habitat change within the species' main feeding sites, i.e. former open grasslands held by the extensive cattle breeding have overgrown with scrubby vegetation (STOYANOV *et al.* 2008). Being common and abundant in the past, currently the Rock Partridge is with low number and is distributed in only few localities within Ponor SPA (NIKOLOV, VASSILEV 2004). The main threats for the species are considered the intensive hunting, abandonment of cultivation in upland areas and hybridization with the Chukar (*Alectoris chukar*) (IANKOV 2007) - the species have been introduced in the area of Manastirishte in the 1990s (NIKOLOV 2002). The decline of the Collared Dove is presumably related to the national decline in the population after the 1990s resulting from the

changes in land management, and more precisely with the crash of the public farms (IANKOV 2007). The increase of the populations of Long-legged Buzzard and Red-rumped Swallow as well as some of the species that recently started to breed in the area (Isabelline Wheatear, Tawny Pipit and Black-headed Bunting) may be explained by the expansion of the range of these species in the country related to demographic factors and climate change (IANKOV 2007, SHURULINKOV *et al.* 2001, 2008).

Threats

Most of the species for which the area is of national and European importance, as well as for those whose populations have been recorded to decline, are associated with the semi-natural grasslands for breeding and feeding (NIKOLOV 2010, IANKOV 2007). Therefore, the management of pastures and meadows is of high importance for maintaining the local populations of these species. Extensive grazing and mowing under appropriate zonation regime is considered to be beneficial for birds and other biodiversity in the area (NIKOLOV 2010, VASSILEV *et al.* 2011). The cover of shrub and woody vegetation within semi-natural grasslands should be carefully controlled in order to prevent forest encroachment and loss of grassland habitats. However, it should be considered that the total removal of shrubs may have negative impacts on avian species richness and diversity in grasslands (NIKOLOV 2010) by removing species using this habitat structure for perching, breeding and hiding from predators (including some species for which this SPA has been designated such as Barred Warbler and Red-backed Shrike). Another problem is the turnover of grasslands into arable lands in some areas because of the recent membership of the country in the European Union and the intensification in agriculture through the Common Agricultural Policy. This practice is more widespread in lowlands (e.g. in Besaparski Ridove, DOBREV *et al.* 2014), however, in smaller extent, also present in Ponor SPA (TZONEV *et al.* 2014). Burning the juniper communities to open area for pastures is a common practice in the area, which has become even more common after the implementation of the national Agri-environmental programme in the country (2007) and local stakeholders have started to apply for subsidies. The fires destroy shrub habitats (TZONEV *et al.* 2014), included those included in Annex 1 of the EU Habitats Directive (Directive 92/43/EEC); furthermore, they directly devastate the broods in the fired zones, create disturbance during the breeding period and remove from the landscape

features important for species of birds included in Annex 1 of the EU Birds Directive. Another threat at the local level is opening and exploitation of quarries, most of the small ones illegally operated in the area. This practice leads to loss and degradation of grassland and rocky habitats (TZONEV *et al.* 2014), which are important for many species of passerine, raptorial birds and partridges (NIKOLOV 2002). For forest birds (mainly woodpeckers and owls), subject of protection in Ponor SPA, illegal cutting (mainly of beech forests) and change in the water regime in the zone is critical for sustaining their habitat, which anyway is not abundant in the area (DIMITROV, PETROVA 2014). Last but not least, human disturbance, poaching and nest robbing are negative factors present in the area (BSPB, unpublished data). Cases of nest robbing are known from the region, mainly related with large falcons (Peregrine and Saker Falcon) and one of the reasons for the extinction of the Saker Falcon from the region (IANKOV, GRADINAROV 2012).

Management implications

To sustain a favourable conservation status of the avifauna in Ponor SPA, the following conservation measures are needed: (1) For semi-natural grasslands: extensive and rotational use under appropriate zonation regimes, appropriate timing and methods of mowing, avoidance of total removal of shrub vegetation within pastures and control of illegal fires (NIKOLOV 2010, VASSILEV *et al.* 2011); (2) For forests: control of illegal cutting and proper management of water regime in the zone (TZONEV *et al.* 2014); (3) For rocky habitats: control of opening quarries and proper management of the quarries exploitation in order to mitigate the negative effects on the avifauna as well as limit the disturbance on cliff nesting birds by climbers and speleologists (KOSTADINOVA, GRAMATIKOV 2007); (4) Better control on intensive hunting, poaching and illegal falconry practices (KOSTADINOVA, GRAMATIKOV 2007; IANKOV, GRADINAROV 2012). A management plan for Ponor SPA is urgently needed to assure efficient implementation of the above-mentioned management recommendations.

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ANNEX. List of bird species recorded in Ponor SPA. Details provided in the legend below

№	Species	Status	BDA	SPEC	IUCN	ETS	WBD	BERN	BONN
1.	<i>Phalacrocorax carbo</i>	M,W	-	-	LC	S	-	III	-
2.	<i>Ixobrychus minutus</i>	M	II/III	3	LC	(V)	I	II	II
3.	<i>Ardeola ralloides</i>	M	II/III	3	LC	(D)	I	II	-
4.	<i>Egretta garzetta</i>	M	II/III	-	LC	S	I	II	-
5.	<i>Casmerodius albus</i>	M,W	-	-	LC	S	-	II	II
6.	<i>Ardea purpurea</i>	M	II/III	3	LC	V	I	II	II
7.	<i>Ardea cinerea</i>	M,W	III	-	LC	S	-	III	-
8.	<i>Ciconia ciconia</i>	M, Be	II/III	2	LC	V	I	II	II
9.	<i>Ciconia nigra</i>	Bm, M	II/III	2	LC	R	I	II	II
10.	<i>Anser albifrons</i>	M	II/III	-	LC	S	-	III	II
11.	<i>Anas platyrhynchos</i>	M	-	-	LC	S	II/III	II	II
12.	<i>Anas querquedula</i>	M	-	3	LC	V	II	III	II
13.	<i>Anas crecca</i>	M	-	-	LC	S	II/III	II	II
14.	<i>Anas penelope</i>	M	-	-	LC	S	II/III	II	II
15.	<i>Neophron percnopterus</i>	V, Be	II/III	3	EN	E	I/II	II	I/II
16.	<i>Gyps fulvus</i>	V, Be	II/III	-	LC	R	I	II	II
17.	<i>Milvus migrans</i>	M	II/III	3	LC	V	I	II	II
18.	<i>Aquila chrysaetos</i>	Br, F	II/III	3	LC	R	I	II	II

№	Species	Status	BDA	SPEC	IUCN	ETS	WBD	BERN	BONN
19.	<i>Aquila heliaca</i>	V, Be	II/III	1	VU	E	I	II	I/II
20.	<i>Aquila pomarina</i>	M	II/III	2	LC	D	I	II	II
21.	<i>Aquila pennata</i>	M	II/III	3	LC	R	I	II	II
22.	<i>Circaetus gallicus</i>	Bm	II/III	3	LC	R	I	II	II
23.	<i>Pandion haliaetus</i>	M	II/III	3	LC	R	I	II	II
24.	<i>Circus aeruginosus</i>	M	II/III	-	LC	S	I	II	II
25.	<i>Circus cyaneus</i>	M	II/III	3	LC	V	I	II	II
26.	<i>Circus pygargus</i>	M	II/III	-	LC	S	I	II	II
27.	<i>Circus macrourus</i>	M	II/III	1	NT	(E)	I	II	II
28.	<i>Buteo rufinus</i>	Br	II/III	3	LC	(E)	I	II	II
29.	<i>Buteo buteo</i>	Br	III	-	LC	S	-	II	II
30.	<i>Buteo lagopus</i>	M	III	-	LC	(S)	-	II	II
31.	<i>Pernis apivorus</i>	Bm	II/III	-	LC	(S)	I	II	II
32.	<i>Accipiter nisus</i>	Br	III	-	LC	S	-	II	II
33.	<i>Accipiter gentilis</i>	Br	III	-	LC	S	-	II	II
34.	<i>Accipiter brevipes</i>	V,Be	II/III	2	LC	R	I	II	II
35.	<i>Falco tinnunculus</i>	Br	III	3	LC	D	-	II	II
36.	<i>Falco naumanni</i>	M	II/III	1	LC	H	I	II	I/II
37.	<i>Falco peregrinus</i>	Br	II/III	-	LC	R	I	II	II
38.	<i>Falco cherrug</i>	F, Be	II/III-I	1	EN	E	I	II	I/II
39.	<i>Falco columbarius</i>	W	II/III	-	LC	S	I	II	II
40.	<i>Falco subbuteo</i>	Bm, M	II/III	-	LC	S		II	II
41.	<i>Tetrao urogallus</i>	V	II	-	LC	(S)	I	III	-
42.	<i>Bonasa bonasia</i>	Br	II/III	-	LC	S	I	III	-
43.	<i>Perdix perdix</i>	Br	-	3	LC	V	II/III	III	-
44.	<i>Coturnix coturnix</i>	Bm	-	3	LC	V	II	III	II
45.	<i>Alectoris graeca</i>	Br	II	2	LC	D	II	III	-
46.	<i>Alectoris chukar</i>	?	-	3	LC	V	II	III	-
47.	<i>Crex crex</i>	Bm	II/III	1	LC	H	I	II	II
48.	<i>Rallus aquaticus</i>	M	III	-	LC	S	II	III	-
49.	<i>Fulica atra</i>	M	-	-	LC	S	II/III	II	II
50.	<i>Gallinula chloropus</i>	Br	III	-	LC	S	II	III	-
51.	<i>Vanellus vanellus</i>	M	III	2	LC	(S)	II	III	II
52.	<i>Charadrius dubius</i>	M	III	-	LC	(S)	-	II	II
53.	<i>Tringa totanus</i>	M	II/III	2	LC	D	II	III	II
54.	<i>Tringa ochropus</i>	M	III	-	LC	(S)	-	II	II
55.	<i>Actitis hypoleucos</i>	M	III	3	LC	D		II	II
56.	<i>Gallinago media</i>	M	II/III	1	NT	(D)	I	II	II
57.	<i>Gallinago gallinago</i>	M	-	3	LC	(D)	II/III	III	II
58.	<i>Scolopax rusticola</i>	M, Be	-	3	LC		II/III	III	II
59.	<i>Larus michahellis</i>	V	-	-	LC	(S)	II	III	-
60.	<i>Larus ridibundus</i>	V	III	-	LC	(S)	II	III	-
61.	<i>Columba livia f. domestica</i>	Br			LC		-		
62.	<i>Columba oenas</i>	V,Be	III	-	LC	S	II	III	-
63.	<i>Columba palumbus</i>	Br	-	-	LC	S	II/III	-	-
64.	<i>Streptopelia turtur</i>	Bm	-	3	LC	D	II	III	II
65.	<i>Streptopelia decaocto</i>	Br	-	-	LC	(S)	II	III	-
66.	<i>Tyto alba</i>	?	III	3	LC	D	-	II	-
67.	<i>Otus scops</i>	Bm	III	2	LC	(D)	-	II	-
68.	<i>Bubo bubo</i>	Br	II/III	3	LC	(H)	I	II	-
69.	<i>Athene noctua</i>	Br	III	3	LC	D	-	II	-
70.	<i>Aegolius funereus</i>	Br	II/III	-	LC	(S)	I	II	-
71.	<i>Asio otus</i>	Br	III	-	LC	S	-	II	-

№	Species	Status	BDA	SPEC	IUCN	ETS	WBD	BERN	BONN
72.	<i>Apus apus</i>	Bm	III	-	LC	S	-	III	-
73.	<i>Apus pallidus</i>	Bm	III	-	LC	S	-	II	-
74.	<i>Tachymarptis melba</i>	Bm	III	-	LC	S	-	III	-
75.	<i>Cuculus canorus</i>	Bm	III	-	LC	S	-	III	-
76.	<i>Caprimulgus europaeus</i>	Bm	II/III	2	LC	(D)	I	II	-
77.	<i>Merops apiaster</i>	M	II	3	LC	D	-	II	II
78.	<i>Coracias garrulus</i>	M	II/III	2	NT	(D)	I	II	II
79.	<i>Upupa epops</i>	Bm	III	3	LC	S	-	II	-
80.	<i>Alcedo atthis</i>	Br	II/III	3	LC	D	I	II	-
81.	<i>Jynx torquilla</i>	Bm	III	3	LC	(D)	-	II	-
82.	<i>Picus viridis</i>	Br	III	2	LC	D	-	II	-
83.	<i>Picus canus</i>	Br	II/III	3	LC	(H)	I	II	-
84.	<i>Dryocopus martius</i>	Br	II/III	-	LC	S	I	II	-
85.	<i>Dendrocopos leucotos</i>	Br	II/III	-	LC	(S)	I	II	-
86.	<i>Dendrocopos major</i>	Br	III	-	LC	S	-	II	-
87.	<i>Dendrocopos syriacus</i>	Br	II/III	-	LC	S	I	II	-
88.	<i>Dendrocopos medius</i>	Br	II/III	-	LC	(S)	I	II	-
89.	<i>Dendrocopos minor</i>	Br	III	-	LC	S	-	II	-
90.	<i>Hirundo rupestris</i>	Bm	III	-	LC	S	-	II	-
91.	<i>Hirundo rustica</i>	Bm	III	3	LC	D	-	II	-
92.	<i>Hirundo daurica</i>	Bm	III	-	LC	S	-	II	-
93.	<i>Delichon urbica</i>	Bm	III	3	LC	S	-	II	-
94.	<i>Riparia riparia</i>	M	II/III	3	LC	S	-	II	-
95.	<i>Galerida cristata</i>	Br	III	3	LC	(D)	-	III	-
96.	<i>Melanocorypha calandra</i>	M	II/III	3	LC	(D)	I	II	-
97.	<i>Lullula arborea</i>	Bm	II/III	2	LC	V	I	III	-
98.	<i>Alauda arvensis</i>	Br	III	3	LC	V	II	III	-
99.	<i>Eremophila alpestris</i>	Br	III	-	LC	(S)	-	II	-
100.	<i>Anthus campestris</i>	Bm	II/III	3	LC	V	I	II	-
101.	<i>Anthus trivialis</i>	Bm	III	-	LC	S	-	II	-
102.	<i>Anthus pratensis</i>	M	III	-	LC	S	-	II	-
103.	<i>Anthus spinoletta</i>	Bm	III	-	LC	(S)	-	II	-
104.	<i>Motacilla flava</i>	Bm, M	III	-	LC	S	-	II	-
105.	<i>Motacilla cinerea</i>	Br	III	-	LC	S	-	II	-
106.	<i>Motacilla alba</i>	Br	III	-	LC	S	-	II	-
107.	<i>Bombycilla garrulus</i>	V	III	-	LC	S	-	II	-
108.	<i>Cinclus cinclus</i>	Br	III	-	LC	S	-	II	-
109.	<i>Troglodytes troglodytes</i>	Br	III	-	LC	S	-	III	-
110.	<i>Prunella modularis</i>	Br	III	-	LC	S	-	II	-
111.	<i>Prunella collaris</i>	W	III	-	LC	(S)	-	II	-
112.	<i>Erithacus rubecula</i>	Br	III	-	LC	S	-	II	-
113.	<i>Luscinia megarhynchos</i>	Bm	III	-	LC	S	-	II	-
114.	<i>Phoenicurus ochruros</i>	Bm	III	-	LC	S	-	II	-
115.	<i>Phoenicurus phoenicurus</i>	Bm	II/III	2	LC	V	-	II	-
116.	<i>Saxicola rubetra</i>	Bm	III	-	LC	S	-	II	-
117.	<i>Saxicola torquata</i>	Bm	III	-	LC	(D)	-	II	-
118.	<i>Oenanthe oenanthe</i>	Bm	III	3	LC	S	-	II	-
119.	<i>Oenanthe isabellina</i>	Bm	III	-	LC	(S)	-	II	-
120.	<i>Oenanthe hispanica</i>	Br	II/III	2	LC	V	-	II	-
121.	<i>Monticola saxatilis</i>	Bm	III	3	LC	(H)	-	II	-
122.	<i>Turdus philomelos</i>	Bm	III	-	LC	S	II	III	-
123.	<i>Turdus torquatus</i>	Br	III	-	LC	S	-	II	-
124.	<i>Turdus merula</i>	Br	III	-	LC	S	II	III	-

№	Species	Status	BDA	SPEC	IUCN	ETS	WBD	BERN	BONN
125.	<i>Turdus viscivorus</i>	Br	III	-	LC	S	II	III	-
126.	<i>Turdus pilaris</i>	W	III	-	LC	S	II	III	-
127.	<i>Turdus iliacus</i>	W	III	-	LC	(S)	II	III	-
128.	<i>Acrocephalus arundinaceus</i>	M	III	-	LC	(S)	-	II	II
129.	<i>Acrocephalus schoenobaenus</i>	M	III	-	LC	S	-	II	II
130.	<i>Acrocephalus palustris</i>	Bm	III	-	LC	S	-	II	II
131.	<i>Hippolais pallida</i>	Bm	III	3	LC	(V)	-	II	II
132.	<i>Hippolais icterina</i>	Bm	III	-	LC	(S)	-	II	II
133.	<i>Sylvia curruca</i>	Bm	III	-	LC	S	-	II	II
134.	<i>Sylvia atricapilla</i>	Bm	III	-	LC	S	-	II	II
135.	<i>Sylvia communis</i>	Bm	III	-	LC	S	-	II	II
136.	<i>Sylvia nisoria</i>	Bm	II/III	-	LC	S	I	III	II
137.	<i>Sylvia borin</i>	Bm	III	-	LC	S	-	II	II
138.	<i>Phylloscopus collybita</i>	Bm	III	-	LC	(S)	-	II	II
139.	<i>Phylloscopus sibilatrix</i>	Bm	III	2	LC	D	-	III	II
140.	<i>Phylloscopus trochilus</i>	M	III	-	LC	S	-	III	II
141.	<i>Phylloscopus bonelli</i>	M	III	2	LC	D	-	II	II
142.	<i>Regulus regulus</i>	Br	III	-	LC	D	-	III	II
143.	<i>Regulus ignicapillus</i>	V	III	-	LC	S	-	III	II
144.	<i>Muscicapa striata</i>	Bm	III	3	LC	H	-	II	II
145.	<i>Ficedula parva</i>	M	II/III	-	LC	(S)	I	II	II
146.	<i>Ficedula hypoleuca</i>	M	III	-	LC	S	-	II	II
147.	<i>Ficedula albicollis</i>	M	II/III	-	LC	S	I	II	II
148.	<i>Ficedula semitorquata</i>	Br	II/III	2	NT	D	I	II	II
149.	<i>Aegithalos caudatus</i>	Br	III	-	LC	S	-	III	-
150.	<i>Parus palustris</i>	Br	III	3	LC	D	-	II	-
151.	<i>Parus lugubris</i>	Br	III	-	LC	(S)	-	II	-
152.	<i>Parus montanus</i>	Br	III	-	LC	S	-	II	-
153.	<i>Parus ater</i>	Br	III	-	LC	(S)	-	II	-
154.	<i>Parus major</i>	Br	III	-	LC	S	-	II	-
155.	<i>Parus caeruleus</i>	Br	III	-	LC	S	-	II	-
156.	<i>Sitta europaea</i>	Br	III	-	LC	(D)	-	II	-
157.	<i>Tichodroma muraria</i>	W	III	-	LC	(S)	-	II	-
158.	<i>Certhia familiaris</i>	Br	III	-	LC	S	-	III	-
159.	<i>Certhia brachydactyla</i>	W	III	-	LC	S	-	II	-
160.	<i>Oriolus oriolus</i>	Bm	III	-	LC	S	-	II	-
161.	<i>Lanius collurio</i>	Bm	II/III	3	LC	(D)	I	II	-
162.	<i>Lanius minor</i>	Bm	II/III	2	LC	(D)	I	II	-
163.	<i>Lanius excubitor</i>	W	III	3	LC	D	-	II	-
164.	<i>Garrulus glandarius</i>	Br	-	-	LC	(S)	II	III	-
165.	<i>Pica pica</i>	Br	-	-	LC	S	II	III	-
166.	<i>Nucifraga caryocatactes</i>	Br	III	-	LC	S	-	II	-
167.	<i>Pyrrhocorax graculus</i>	Br	III	-	LC	(S)	-	II	-
168.	<i>Corvus monedula</i>	Br	-	-	LC	S	II	-	-
169.	<i>Corvus cornix</i>	Br	-	-	LC	S	II	III	-
170.	<i>Corvus corax</i>	Br	III	-	LC	(S)	-	III	-
171.	<i>Sturnus roseus</i>	M	II	-	LC	S	-	II	-
172.	<i>Sturnus vulgaris</i>	Br	-	3	LC	S	II	III	-
173.	<i>Passer domesticus</i>	Br	-	3	LC	S	-	III	-
174.	<i>Passer montanus</i>	Br	III	3	LC	S	-	III	-
175.	<i>Fringilla coelebs</i>	Br	III	-	LC	S	-	III	-
176.	<i>Fringilla montifringilla</i>	W	III III I III	-	LC	S	-	III	-

№	Species	Status	BDA	SPEC	IUCN	ETS	WBD	BERN	BONN
177.	<i>Serinus serinus</i>	Bm	III	-	LC	S	-	III	-
178.	<i>Carduelis chloris</i>	Br	III	-	LC	S	-	II	-
179.	<i>Carduelis carduelis</i>	Br	III	-	LC	(S)	-	II	-
180.	<i>Carduelis spinus</i>	W	III	-	LC	S	-	II	-
181.	<i>Carduelis cannabina</i>	Br	III	2	LC	S	-	II	-
182.	<i>Loxia curvirostra</i>	Br	III	-	LC	(S)	-	II	-
183.	<i>Pyrrhula pyrrhula</i>	Br	III	-	LC	(S)	-	III	-
184.	<i>Coccothraustes coccothraustes</i>	Br	III	-	LC	S	-	II	-
185.	<i>Emberiza citrinella</i>	Br	III	-	LC	(S)	-	II	-
186.	<i>Emberiza melanocephala</i>	Bm	III	2	LC	(V)	-	II	-
187.	<i>Emberiza cirius</i>	Bm	III	-	LC	S	-	II	-
188.	<i>Emberiza hortulana</i>	Bm	II/III	2	LC	(V)	I	III	-
189.	<i>Miliaria calandra</i>	Br	III	2	LC	(S)	-	III	-

LEGEND: Status: **Br** – resident breeder; **Bm** – migratory breeder; **Be** - extinct as breeder; **M** –migrating through the area, but not breeding; **W** – wintering; **V** – vagrant; **F** – species breeding beyond the boundaries of the SPA, yet visiting the area while foraging; **?** – unclear status. **BDA** – Species listed in the Annexes to the Biological Diversity Act: **II** – Annex 2 to Art. 6; **III** – Annex 3 to Art. 37. **SPEC** – species of European conservation concern: **SPEC1** – Species in Europe of global conservation concern due to their status of globally threatened, conservation dependent, or insufficiently studied; **SPEC2** – Species, whose global population is concentrated in Europe, with unfavourable conservation status in Europe; **SPEC3** – Species, whose population is not concentrated in Europe, with unfavourable conservation status in Europe; **SPEC4**

– Species, whose global population is concentrated in Europe, with favourable conservation status. **IUCN** - Red List of Threatened Species: **LR** – Low risk; **VU** –Vulnerable; **EN** - Endangered. **ETS** - European Threat Status of birds: **E** – Endangered; **V** – Vulnerable; **R** – Rare; **D** – Declining; **H** – Historically declining; **L** – Localized; **S** – Stable; **()** – Temporary status. **BERN** – Species listed in the Convention on the Conservation of European Wildlife and Natural Habitats; the number refers to the Annex of the Convention the species is listed in. **WBD** – Species listed in EU **Birds Directive**; the number refers to the Annex of the Directive the species is listed in. **BONN** – Species listed in the Convention on the Conservation of Migratory Species of Wild Animals; the number refers to the Annex of the Convention the species is listed in.