PRELIMINARY DATA REGARDING THE AQUATIC BIRD FAUNA OF STOENEŞTI LOCALITY – OLT COUNTY

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Abstract. *The paper renders the results of the observations regarding the aquatic avifauna from Stoeneşti locality - Olt County during 2007-May 2009. It includes the taxonomic list, the phenologic status, and the protective status of the aquatic bird species. Most of the 52 observed aquatic species that stay here or are in passage have a secure status within Europe. 18 species have a certain endangerment status (endangered, vulnerable, declining, limited territory species) and they are found on different protection international or national lists.*

Keywords: *aquatic birds, phenology, diversity, conservation status.*

Rezumat. Date preliminare privind păsările acvatice din localitatea Stoeneşti – judeţul Olt. *Lucrarea prezintă rezultatele observaţiilor referitoare la avifauna acvatică din zona localităţii Stoeneşti-judeţul Olt în perioada 2007-mai 2009. Include lista taxonomică, statutul fenologic, statutul protectiv al speciilor de păsări acvatice. Din cele 52 de specii acvatice observate, care staţionează sau sunt în trecere, majoritatea are un statut sigur pe plan european. 18 specii au un anumit statut de periclitare (specii periclitate, vulnerabile, în declin, cu teritoriu limitat), fiind trecute pe diferite liste protecţioniste internaţionale şi naţionale.*

Cuvinte cheie: *păsări acvatice, fenologie, diversitate, statut de conservare.*

INTRODUCTION

Stoeneşti locality is situated in the southern part of Olt County and the eastern part of the Romanaţi Plain, on the right side of the Olt Valley (Fig. 1). It is made up of a single village holding the same name. The administrative territory of the locality covers a total surface of 3,531 hectares. It is also here a road junction. The main access routes are – The European Road E70 and the County Road DJ 342, which ensure the link between the settlement and the other settlements from the region (12 km away there is Caracal town, 10 km Drăgăneşti Olt, and 48 km Slatina). It is also a railway station on the route Bucharest-Timişoara.

Figure 2. Pool and acacia plantation within Stoenesti locality.
Figura 2. Balta şi plantaţia de salcâm din comuna Stoeneşti.

At the periphery of Stoeneşti locality, there is a wet habitat characterized by the presence of many permanent pools. Some of them are continuous with small interruptions marked by bridges surrounded by reed and bulrush that represent an excellent environment for the aquatic and semi-aquatic birds. In the East, there is the Olt River and migratory birds frequently rest on its islands and banks.

Figure1. Map of Olt County. Stoeneşti locality is underlined.
Figure 1. Harta jud. Olt. Comuna Stoeneşti este subliniată.

The Olt flows parallel with the locality for about 3-4 km. The annual discharge of the river (oscillating between 160 m^3/s and 190 m^3/s,) allowed the construction of an irrigation system supplied by the Olt. In the area, there is also a canal of the same length as the Olt within the locality, surrounded by paludous vegetation within certain parts. In the proximity of the locality, there is also an acacia forest (Fig. 2).

There are quite a few data about the ornithological fauna of the Olt Valley within the county with the same name. They are simple information referring to the presence of the species mentioned at the winter and autumn censuses organized by the Romanian Ornithological Society.

The bird fauna of Stoeneşti area has not been studied from the biological point of view yet. This is the main reason for elaborating of the first list of the aquatic species of the area.

The target of this study is to inform the ornithologists about the main aquatic, semi-aquatic and reed bird species from Stoeneşti Locality, Olt County between 2007 and May 2009. In order to reach this target, we aimed at identifying and establishing the specific componence of the aquatic bird fauna, at clarifying the phenological categories, the diversity of the bird communities during different seasons, at achieving a list rendering the protective status of the identified aquatic bird species.

MATERIAL AND METHODS

The main used materials were a binocular (Norconia 10x50), a camera Fuji FinePix S5700, a video camera Panasonic SDR-H20-EP-S, and PETERSON (1984) and BRUUN et al. (1999) field guides for the identification of species.

The most frequently used work methods were the transect method and the direct observation method. The trips were made seasonally, in the morning and more rarely in the afternoon. Most of the visits took place between 9 a.m. and 2 p.m. and between 4 p.m. and 8 p.m. in summer and between 11 a.m. and 2 p.m. in winter.

The observations were made from stationary points, visually or by means of the binoculars.

The species were identified using the specific guides or the literature in the field. We took into account the model elaborated by HAGEMEIJER & BLAIR (1997) for the systematic of the species.

We wrote down the field observations regarding the number of aquatic species, the number of the individuals belonging to the respective species, the points where it was observed, the date when it was seen, data related to the behaviour of the species, meteorological data etc. All the data gathered in the field were then processed from the systematic, biological, and ecological points of view.

RESULTS AND DISCUSSIONS

The location of the settlement, the vegetation from the studied area, which is characterized by a great variety of habitats and a large number of vegetal associations, allowed us to emphasize a great number of birds.

We identified 52 aquatic species grouped in 8 orders and 14 families from the systematic point of view (Table 1 and 2). Anseriformes and Charadriiformes orders are the best represented – 14 and 15 species. We also considered as aquatic birds the species that breeding in the reed – the marsh harrier, reed bunting, warblers and the wagtails that are more frequent along the rivers and around the pools.

Table 1. Numerical distribution of the observed bird species on superior taxonomic units (families, orders).
Tabel 1. Repartiția numerică a speciilor de păsări observate pe unități taxonomice superioare (familii, ordine).

Crt. no.	Order	Family	Number of species
1.	Podicipediformes	Podicipedidae	2
2.	Pelecaniformes	Phalacrocoracidae	2
3.	Ciconiiformes	Ardeidae	7
		Ciconiidae	1
4.	Anseriformes	Anatidae	14
5.	Falconiformes	Accipitridae	1
6.	Gruiformes	Rallidae	2
7.	Charadriiformes	Recurvirostridae	1
		Charadriidae	2
		Scolopacidae	7
		Laridae	2
		Sternidae	3
8.	Passeriformes	Motacillidae	2
		Sylviidae	5
		Emberizidae	1

The aquatic avifauna undergoes seasonal modifications. Sometimes, climatic conditions, food, human activities influence the presence or the absence of the aquatic birds in the area during certain periods, as well as the numerical variations of the same species.

During the winter period (November-February), the Anseriformes represented the most numerous group of aquatic species. There were observed 12 species of Anatidae. The common species monitored during the study were *Anas plathyrhynchos, A. acuta, A. crecca, A. querquedula, A. penelope*, and *A. anser*. The common goldeneye (*Bucephala clangula*) was observed in January 2007 on the island located in the middle of the Olt – 8 individuals, while in February 2008, there were 15 individuals. During the winter 2008, there stationed a family of mute swan, *Cygnus olor*, with 6 juveniles. Among the rallidae, *Fulica atra* and *Gallinula chloropus* are the dominant species. *Ardea cinerea, Egretta alba, Tachybaptus ruficollis, Podiceps cristatus* etc. were noticed (in winter) as separate individuals or in small groups of maximum four individuals. In the winter of 2008, there stationed 40 individuals of *Phalacrocorax pygmaeus* and 27 of *P. carbo*. In February 2007, there were seen 2 individuals of Eurasian curlew (*Numenius arquata)* in the proximity of the irrigation system. Tens of individuals of *Larus ridibundus* and *L. cachinnans* were noticed along the Olt River and on the island by the beginning of November and by the end of winter (February).

It is worth mentioning that the Olt River represents an extremely important migration route. This area is crossed by the bird species migrating towards Central and Northern Europe. This is why there were noticed numerous aquatic species during the spring and autumn passage.

In spring (March, April), some birds that come from the wintering places, remain to breed in the area (little bittern, white stork, lapwing, warbler species, grebe etc). Others are just in passage between the nesting and wintering areas (shoveler, ferruginous duck, little ringed plover, etc.). During this period, the species that are winter visitors and were observed in the cold season, usually prepare to leave gradually; some of them in February (*Aythya marila, A. fuligula, Bucephala clangula, Anser albifrons* etc.), most of them in March and by the beginning of April (*Anas penelope, A. crecca, Anser anser*). The garganey (*Anas querquedula*) left the area in May in 2007. In 2008, it was seen during summer as well. In May 2009, it has not left the aquatic habitat from Stoeneşti yet.

In summer, most of the species have an intense activity around the nest and the chicks. After the nesting period, many species make local trips for a trophic purpose. The juveniles and the adults move between the nesting (which become spots for staying over night) and the feeding places. This is why, in the habitat, there were noticed other species that nest in the neighbouring areas and come here in search for food – the great bittern (*Botaurus stellaris*), the great egret (*Egretta alba*), the grey heron (*Ardea cinerea*), the black tern (*Chlidonias niger*) etc.

Autumn (September, October) is the proper migration period with an accelerated dynamics. The visitor populations leave the field in favour of winter visitors and passage species.

Autumn migration lasts longer. According to the climatic factors, for some species migration starts by the end of July and the beginning of August, while for the other species it takes place by the beginning of October and the end of November. In the autumn passage, in August, there appear the cormorant species (that in the winter of 2008 did not leave the habitat). The snipe and great snipe species, with a reduced number of individuals (2-6) were noticed in August and September in the area of the forest located near the pool.

The insufficient research does not allow us to establish a precise grouping of the observed birds in clear phonological categories, because, the species phenology being flexible, the same species can be both passage bird in certain years and summer or winter visitors in other years. By analysing Table 2 that renders the phenology of the birds, one may notice that there predominate migratory birds: summer visitors, winter visitors, passage birds (47 species), followed by resident and partially migratory birds (5 species).

The data referring to the breeding/non-breeding aquatic birds indicate the fact that there predominate the non-breeding species. Of the summer visitor species, 11 are breeding, some in the aquatic vegetation, in the reed beds – *Tachybaptus ruficollis* (in 2007)*, Podiceps cristatus* (in 2008), *Ixobrychus minutus, Nycticorax nycticorax, Locustella luscinoides,* species of *Acrocephalus* sp., others species breeding in the agricultural fields – *Vanellus vanellus* (in 2008). *Motacilla alba* nests on the soil among herbs, in cracks of walls etc. *Motacilla flava* nests on wet meadows on the soil. As yellow wagtail, it predominates *Motacilla flava feldegg*. There were also seen the sub-species of *Motacilla flava thunbergi* and *M. flava flava*. The white stork (*Ciconia ciconia*) built its nest at a top of an electric pole from the village. It used the same nest for many years. In 2007, there were 5 chicks, while in the summer of 2008 there were 4 chicks. In 2009, the white stork came on the 27th of March. Although there are proper conditions, we have seen only one pair of storks nesting in the area so far.

The human impact upon the area refers to hunting (especially of the duck and goose species – see Table 2), fishing, entertainment. The pools and meadows are often used by domestic animals, poultry, cows and sheep that graze in the neighbourhood. The reed is cut and used in the households or it is burnt. The area does not benefit from a protection regime.

Part of the identified birds is included on the national and international protection lists as having an unfavourable conservation status in Europe.

According to the table, most of the species, 32, are in the category Non SPEC, which means that their populations are not concentrated within Europe, thus being secure (S). There are not necessary special and immediate measures for their protection. The other 20 species are included in the 4 SPEC categories.

With regard to the conservation status (European Threat Status), it can be noticed according to the table: 9 species are vulnerable: *Phalacrocorax pygmaeus, Botaurus stellaris, Ixobrychus minutus, Ardeola ralloides, Ciconia ciconia, Anas acuta, A. querquedula, Aythya nyroca, Gallinago media*; 5 species are declining: *Nycticorax nycticorax, Numenius arquata, Tringa glareola, Chlidonias hybridus, C. niger*; one species with a limited location area: *Aythya marila*. 8 bird species are mentioned in the Red Book of the Vertebrates from Romania as endangered (*Egretta garzetta, E. alba* and *Himantopus himantopus*) and vulnerable species (*Phalacrocorax pygmaeus, Nycticorax nycticorax, Ardeola ralloides, Ciconia ciconia, Aythya nyroca*). In Fig. 3 there are presented some bird species (from the studied area) that have unfavourable conservation status in Europe.

According to law 197/ 2007, 37 of the emphasized species cannot be hunted as they are nationally protected.

Consequently, there should be taken protection measures able to favour the maintenance of the bird populations in a state of balance with the sustainable capitalization of the natural resources by the locals.

Table 2. Aquatic avifauna of Stoeneşti locality (Olt).
Tabel 2. Avifauna acvatică a localităţii Stoeneşti (Olt).

Crt. No.	Species	Phenological Status	Spec Category	Threat Status	R.B.V. Romania	Law.No 197/2007
1.	*Tachybaptus ruficollis*	SV, RWV	Non SPEC	S		*
2.	*Podiceps cristatus*	SV, RWV	Non SPEC	S		*
3.	*Phalacrocorax carbo*	P, RWV	Non SPEC	S		
4.	*Phalacrocorax pygmaeus*	P, RWV	SPEC 2	V	V	*
5.	*Botaurus stellaris*	SV	SPEC 3	(V)		*
6.	*Ixobrychus minutus*	SV	SPEC 3	(V)		*
7.	*Nycticorax nycticorax*	SV	SPEC 3	D	V	*
8.	*Ardeola ralloides*	SV	SPEC 3	V	V	*
9.	*Egretta garzetta*	SV	Non SPEC	S	E	*
10.	*Egretta alba*	P, RWV	Non SPEC	S	E	*
11.	*Ardea cinerea*	SV, RWV	Non SPEC	S		*
12.	*Ciconia ciconia*	SV	SPEC 2	V	V	*
13.	*Cygnus olor*	SV, RWV	Non SPEC	S		*
14.	*Anser albifrons*	WV	Non SPEC	S		
15.	*Anser anser*	WV, P	Non SPEC	S		
16.	*Anas penelope*	P, WV	Non SPEC	S		
17.	*Anas crecca*	WV, P	Non SPEC	S		
18.	*Anas platyrhynchos*	PM	Non SPEC	S		
19.	*Anas acuta*	P, WV	SPEC 3	V		
20.	*Anas querquedula*	P, SV	SPEC 3	V		
21.	*Anas clypeata*	P	Non SPEC	S		
22.	*Aythya ferina*	P, WV	SPEC 4	S		
23.	*Aythya nyroca*	P	SPEC 1	V	V	*
24.	*Aythya fuligula*	WV	Non SPEC	S		
25.	*Aythya marila*	WV	SPEC 3	L		
26.	*Bucephala clangula*	WV	Non SPEC	S		
27.	*Circus aeruginosus*	OV	SPEC 4	S		*
28.	*Gallinula chloropus*	PM	Non SPEC	S		
29.	*Fulica atra*	PM	Non SPEC	S		
30.	*Himantopus himantopus*	P, SV	Non SPEC	S	E	*
31.	*Charadrius dubius*	P	Non SPEC	(S)		*
32.	*Vanellus vanellus*	SV	Non SPEC	(S)		*
33.	*Calidris temminckii*	P	Non SPEC	(S)		*
34.	*Gallinago gallinago*	P	Non SPEC	(S)		
35.	*Gallinago media*	P	SPEC 2	(V)		*
36.	*Numenius arquata*	P, RWV	SPEC 3	D		*
37.	*Tringa ochropus*	P, SV	Non SPEC	(S)		*
38.	*Tringa glareola*	P	SPEC 3	D		*
39.	*Actitis hypoleucos*	P, SV	Non SPEC	S		*
40.	*Larus ridibundus*	R	Non SPEC	S		*
41.	*Larus cachinnans*	R	Non SPEC	S		*
42.	*Sterna hirundo*	SV	Non SPEC	S		*
43.	*Chlidonias hybridus*	SV	SPEC 3	D		*
44.	*Chlidonias niger*	SV	SPEC 3	D		*
45.	*Motacilla flava*	SV	Non SPEC	S		*
46.	*Motacilla alba*	SV	Non SPEC	S		*
47.	*Locustella luscinioides*	SV	SPEC 4	(S)		*
48.	*Acrocephalus schoenobaenus*	SV	SPEC 4	(S)		*
49.	*Acrocephalus palustris*	SV, P	Non SPEC	S		*
50.	*Acrocephalus scirpaceus*	SV	SPEC 4	S		*
51.	*Acrocephalus arundinaceus*	SV	Non SPEC	S		*
52.	*Emberiza schoeniclus*	WV, P	Non SPEC	S		*

Legend:
Phenological status: SV – summer visitors, WV – winter visitors, RWI – rare winter visitors, P – passage visitors, R – resident, PM – partial migrant.
Threat status: S – secure, V – vulnerable, D – declining, E – endangered, L – localized ( ) temporary status.
SPEC category: SPEC 1 – species of global conservation concern, SPEC 2 – unfavourable conservation status concentrated in Europe, SPEC 3 – unfavourable conservation status not concentrated in Europe, SPEC 4 – favourable conservation status concentrated in Europe, NonSPEC – favourable conservation status not concentrated in Europe
R.B.V. Romania: Red Book of Vertebrates from Romania.
Law no. 197/2007: * – protected species; the rest are game species.
Legendă:
Statut fenologic: SV – oaspeți de vară; WV – oaspeți de iarnă; RWI – oaspeți de iarnă rari; P – specii de pasaj; R- specii sedentare; PM – migrator parțial.
Statut de amenințare: S - în siguranță; V – vulnerabil; D – în declin; E- periclitat; L – cu areal limitat.
Categoria SPEC: SPEC 1 – specii care necesită conservare globală, SPEC 2 - statut de conservare nefavorabil concentrat în Europa, SPEC 3 - statut de conservare nefavorabil care nu e concentrat în Europa, SPEC 4 - statut de conservare favorabil care e concentrat în Europa, NonSPEC – statut de conservare favorabil care nu e concentrat în Europa.
Legea nr. 197/2007: * – specii protejate; restul sunt specii de vânat.

CONCLUSIONS

The location of Stoeneşti on the right bank of the Olt River, the pools, reed, meadows, all these offer trophic resources, shelter and nesting place for numerous aquatic bird species. The area lies on the migration route of certain species.

From the systematic point of view, the aquatic birds from Stoeneşti, observed between 2007 and May 2009, count 52 species belonging to 8 orders and 14 families.

The number of species and individuals oscillated according to the climatic factors and feeding conditions.

15 species are found on the international lists as having a certain endangerment status: 9 vulnerable species: *Phalacrocorax pygmaeus, Botaurus stellaris, Ixobrychus minutus, Ardeola ralloides, Ciconia ciconia, Anas acuta, A. querquedula, Aythya nyroca, Gallinago media*; 5 declining species: *Nycticorax nycticorax, Numenius arquata, Tringa glareola, Chlidonias hybridus, C. niger*, one species with limited location area: *Aythya marila.*

Of the total number of aquatic species, 15 present cynegetic interest (they can be hunted). Most of them belong to Anatidae.

Three species observed within the territory of Stoeneşti are nature monuments (Commission of Nature Monuments – The Romanian Academy): *Egretta alba*, *E. garzetta* and *Himantopus himantopus.*

The monitoring of aquatic birds should continue in order to monitor the evolution of their dynamics and to take the most important measures for their protection.

REFERENCES

BOTNARIUC N. & TATOLE VIORICA (Editors). 2005. *Cartea Roşie a Vertebratelor din România*. Academia Română. Bucureşti: 85-172.

BRUUN B., DELHIN H., SVENSSON L. 1999. *Păsările din România şi Europa - Determinator ilustrat*. Edit. Hamlyn, Londra (Ediție românească, adaptată de Dan MUNTEANU): 320pp.

HAGEMEIJER W. J. & BLAIR M. J. 1997. *The EBCC Atlas of European Breeding Birds. Their Distribution and Abundance*. Edit. T& A. D. Poyser. London: 902pp.

MUNTEANU D. 2004. *Arii de importanță avifaunistică din România – Documentații*. Societatea Ornitologică Română. Edit. Alma Mater. Cluj-Napoca: 307pp.

PETERSON R., MOUNTFORT G., HOLLOM P. A. D. & GEROUDET P. 1984. *Guide des Oiseaux d'Europe*. Edit. Delachaux et Niestlé. Neuchâtel – Paris: 460pp.

*** *Legea Nr. 197/2007 pentru modificarea şi completarea legii vânătorii şi a protecției fondului cinegetic*. Publicată în M.O. nr. 472 din 13.07.2007. Bucureşti.

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Ardeola ralloides (juvenile) – vulnerable species.

Phalacrocorax pygmaeus – vulnerable species.

Egretta alba – Nature monument.

Egretta garzetta – Nature monument.

Aythya nyroca – vulnerable species.

Ciconia ciconia (juvenile) – vulnerable species.

Figure 3. Some species with unfavourable conservation status in Europe (Original photo).
Figura 3. Câteva specii cu statut nefavorabil de conservare în Europa (Fotografii originale).