

**THE SYSTEMATIC, BIOGEOGRAPHIC ORIGIN, PHENOLOGY,
DIET, BREEDING AND STATUS OF PROTECTION OF THE
SPECIES OF BIRDS OBSERVED ON THE BASINS FROM THE
ARGEȘ RIVER**

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ABSTRACT. The avifauna observed between February 2013 and January 2014 on the Vâlcele, Budeasa, Bascov, Pitești, and Golești basins from the protected area ROSPA0062 - The Dam Basins of the Argeș River contains 129 species; among them, 64 are dependent on wetlands. The Passeriformes and the Charadriiformes are the most important orders from the qualitative point of view. Regarding the biogeographical origin, the European species are situated on the first place, by phenology, the summer or predominantly summer visitors are the most numerous and by the diet, the zoophagous-polyphagous ones. The breeding species (the possible, probable or certainly breeding species) are the best represented. Almost a quarter of the whole number of species and over a third of the number of species dependent on wetlands are included in the Annex I of the Birds Directive, having a special status of protection.

Keywords: avifauna, The Dam Basins of the Argeș River, Special Protected Area, Natura 2000 network.

REZUMAT. Sistemática, originea biogeografică, fenologia, regimul de hrană, cuibărirea și statutul de protecție al speciilor de păsări observate pe lacurile de acumulare de pe râul Argeș. Avifauna observată între februarie 2013 și ianuarie 2014 pe lacurile de acumulare din aria protejată ROSPA0062 - Lacurile de acumulare de pe Argeș conține 129 de specii; dintre acestea, 64 sunt dependente de zonele umede. Passeriformes and Charadriiformes sunt cele mai importante ordine din punct de vedere calitativ. Privind originea biogeografică, speciile europene sunt situate pe primul loc, după fenologie, speciile oaspeți de vară și predominant oaspeți de vară sunt cele mai numeroase iar, după regimul de hrană, cele zoofag-polifage. Speciile cuibăritoare (posibil, probabil sau sigur cuibăritoare) sunt cel mai bine reprezentate. Aproape un sfert din numărul total de specii și peste o treime din numărul de specii dependente de zonele umede sunt incluse în Anexa I a Directivei Păsări, având un statut special de protecție.

Cuvinte cheie: avifaună, Lacurile de acumulare de pe Argeș, Arie de Protecție Specială, rețeaua Natura 2000.

INTRODUCTION

The study of the avifauna from the dam lakes is a subject of actuality because it offers a real image about the anthropogenic pressure on the natural environment. It is noticeable that the building of these basins destroys the old habitats, but, in the same time, creates new ones and, thus, the biodiversity from the respective areas can grow.

The study of the ornithofauna of the artificial lakes from the Argeş County started immediately after their building (Mătieş, 1969, Munteanu & Mătieş, 1983, Gava, 1997, Gava et al., 2004a, b, 2007, Mestecăneanu et al., 2004, Conete et al., 2008, 2011, Conete, 2011, Mestecăneanu et al., 2010, Gava et al., 2011, etc.).

Recently, following the study from 2013-2014 performed here, a series of articles regarding the avifauna observed on every basin, in assembly, over all year or over its ecological seasons were published (Mestecăneanu & Gava, 2013, 2014a, 2014b, 2014c, 2015a, 2015b, 2015c, 2016a, 2017). The impact of the human activity exerted in the respective period was also taken into consideration (Mestecăneanu & Gava, 2014d, 2016b).

In the present paper we discussed some aspects about the systematic, biogeographic origin, phenology, diet, breeding and the protection status of the species of birds identified here.

MATERIALS AND METHODS

The reservoirs Vâlcele (640 ha), Budeasa (643 ha), Bascov (140 ha), Piteşti (150 ha), and Goleşti (680 ha) were built on the Argeş River beginning with 1965 (cf. <http://www.baraje.ro>), (Fig. 1). They are part of the protected area ROSPA0062 - The Dam Basins of the Argeş River ("Lacurile de acumulare de pe Argeş"), component of the Natura 2000 network. The Argeş River springs from the Făgăraş Mountains, and drains the Subcarpathians, the Getic Piedmont and the Romanian Plain.

The vegetation of the basins includes diverse elements, mainly of the wetland type. The component species of the flora are: *Salix alba* L., *Alnus incana* (L.), *Alnus glutinosa* L., *Populus alba* L., *Phragmites australis* (Cav.) Trin. ex Steud., *Typha angustifolia* L., *Typha latifolia* L., *Carex sylvatica* Huds., *Lysimachia nummularia* L., *Juncus effusus* L., *Scirpus sylvaticus* L., *Ceratophyllum demersum* L., *Myriophyllum verticillatum* L., *Sparganium erectum* L., *Mentha aquatica* L., *Allisma lanceolatum* With., *Alisma plantago-aquatica* L., *Polygonum mite* L., *Lemna minor* L., *Potamogeton crispus* L., *Oenanthe aquatica* (L.) Poir., *Polygonum hydropiper* (L.) Spach., *Bidens tripartita* L., etc. (Stancu, 2014).

The fauna is characteristic of wetland areas from Romania and includes various species of invertebrates and vertebrates.

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The climate is continental with hilly features. The water average annual temperature is 9 °C at Pitești, few degrees colder upstream, and ca. 1 °C warmer downstream. A bridge of ice can form in the winters when the air temperature decreases for a longer period below 0 °C (Barco & Nedelcu, 1974).

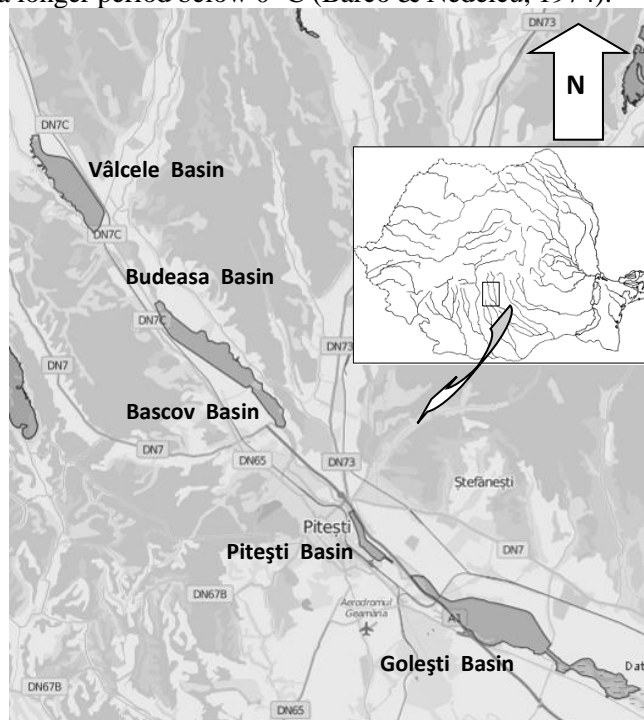


Figure 1 - The map of the area
(by <http://biodiversitate.mmediu.ro>, modified).

As field methods, we used mainly the itinerary one. It was combined with the fixed point of observations method (where the first one was insufficient). The tracks and points were selected to be the most favourable for the observation of water birds from the banks and were kept every time. The trips were performed along all five basins a day, between 10 and 20 of every month, from February 2013 to January 2014. A few visual tools were used: two binoculars (10x50), a spotting scope (14-45x50) and a photo device (42x, optical zoom).

The scientific nomenclature and classification of the birds are compatible with the Hamlin Guide (Bruun et al., 1999), the biogeographic origin is the one proposed by Stegman (Cătuneanu et al., 1978), the phenology corresponds to the Guide of the Romanian and European Birds (Bruun et al., 1999), the diet is the one based on Cramp (Cramp, 2000), the breeding codes are in accord to the methodology of the Atlas of the Breeding Birds from Romania (<http://www.atlaspasari.ro/>) and the protection status was analysed according to the principal international or national issues in the domain: the Birds Directive (2009/147/CE), the Bern Convention, the Bonn Convention, the

Law of the Hunting and Game Found Protection from Romania 407/2006, the Emergency Ordinance 57/2007 of the Romanian Government, the Red Book of the Romanian Vertebrates, and the IUCN Red List.

RESULTS AND DISCUSSIONS

Between February 2013 and January 2014, on the above mentioned basins from the Argeş River (Vâlcele, Budeasa, Bascov, Piteşti, and Goleşti), 129 species of birds were identified. They appertain to 16 orders and 40 families. Among them, 64 species are dependent on wetlands and belong to 10 orders and 18 families (Tab. 1). From the qualitative point of view, generally speaking, the most important order is the Passeriformes; it is followed by Charadriiformes and Anseriformes (Fig. 2a), while the most important family is Anatidae; the Sylviidae and the Scolopacidae come next (Fig. 3a). The situation changes obviously, if we consider only the species dependant on wetlands, when the Charadriiformes order is the best represented; it is followed by the Anseriformes, Ciconiiformes and Passeriformes (the latest two ex aequo), (Fig. 2b). In this case, the Anatidae family is followed by the Scolopacidae and by the Laridae (Fig. 3b). The situation is clearer if we look to the percentage distribution (Tab. 2, 3).

Table 1 - The systematic, biogeographic origin, phenology, diet, breeding and status of protection of the species.

No.	Orders/ Families/Species	Biogeographic origin	Phenology	Diet	Breeding	Birds Directive (2009/147/CE)	Bern Convention	Bonn Convention	Hunting Law	Red Book	IUCN Red List	Emergency Ordinance 57/2007
	I. Order GAVIIFORMES											
	Fam. Gaviidae											
1	<i>Gavia arctica</i> (Linnaeus, 1758)*	S	OI	Ih	O	AI	AII	AII	e		LC	A3
	II. Order PODICIPEDIFORMES											
	Fam. Podicipedidae											
2	<i>Podiceps cristatus</i> (Linnaeus, 1758)*	Tp	OV, RI	Ih	C		AIII		e		LC	
3	<i>Podiceps grisegena</i> Boddaert, 1783*	E	OV	Zoo-P	O		AII	AII	e		LC	
4	<i>Podiceps nigricollis</i> Brehm, 1831*	E	MP	Zoo-P	A		AIII		e		LC	

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5	<i>Tachybaptus ruficollis</i> (Pallas, 1764)*	E	OV, RI	Zoo-P	A		AII		e		LC	A4B
	III. Order PELECANIFORMES											
	Fam. Phalacrocoracidae											
6	<i>Phalacrocorax carbo</i> (Linnaeus, 1758)*	Tp	OV, RI	Ih	A		AIII		e		LC	
7	<i>Phalacrocorax pygmeus</i> (Pallas, 1773)*	M	OV, RI	Ih	O	AI	AII	AII	e	p	LC	A3
	Fam. Pelecanidae											
8	<i>Pelecanus crispus</i> Bruch, 1832*	Mo	OV	Ih	O	AI	AII	AI	e	p	VU	A3
	IV. Order CICONIIFORMES											
	Fam. Ardeidae											
9	<i>Ixobrychus minutus</i> (Linnaeus, 1766)*	E	OV	Zoo-P	A	AI	AII	AII	e		LC	A3
10	<i>Egretta garzetta</i> (Linnaeus, 1766)*	M	OV	Zoo-P	A	AI	AII		e	p	LC	A3
11	<i>Egretta alba</i> (Linnaeus, 1758)*	Ch	OV, RI	Zoo-P	O	AI	AII	AII	e	p	LC	A3
12	<i>Ardeola ralloides</i> (Scopoli, 1769)*	M	OV	Zoo-P	A	AI	AII		e	p	LC	A3
13	<i>Ardea cinerea</i> Linnaeus, 1758*	Tp	OV, RI	Zoo-P	A		AIII		e		LC	
14	<i>Ardea purpurea</i> (Linnaeus, 1766)*	M	OV	Zoo-P	O	AI	AII	AII	e	p	LC	A3
15	<i>Nycticorax nycticorax</i> (Linnaeus, 1758)*	M	OV	Zoo-P	C	AI	AII		e	p	LC	A3
	Fam. Ciconiidae											
16	<i>Ciconia ciconia</i> (Linnaeus, 1758)*	E	OV	Zoo-P	O	AI	AII	AII	e	p	LC	A3
	V. Order ANSERIFORMES											
	Fam. Anatidae											
17	<i>Cygnus olor</i> (Gmelin, 1789)*	E	MP	Om	B	AII/B	AIII	AII	e		LC	
18	<i>Cygnus cygnus</i> (Linnaeus, 1758)*	S	OI	Om	O	AI	AII	AII	e		LC	A3

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19	<i>Anser albifrons</i> (Scopoli, 1769)*	AR	OI	V	O	AII/B, AIII/B	AIII	AII			LC	
20	<i>Anas platyrhynchos</i> Linnaeus, 1758*	Tp	MP, OI	Om	C	AII/A, AIII/A	AIII	AII			LC	
21	<i>Anas strepera</i> Linnaeus, 1758*	Tp	OV	V	O	AII/A	AIII	AII			LC	
22	<i>Anas penelope</i> Linnaeus, 1758*	S	P, OI	V	O	AII/A, AIII/B	AIII	AII			LC	
23	<i>Anas querquedula</i> Linnaeus, 1758*	Tp	OV, P	Om	O	AII/A	AIII	AII			LC	
24	<i>Anas crecca</i> Linnaeus, 1758*	Tp	P, OI, OV	Om	A	AII/A, AIII/B	AIII	AII			LC	
25	<i>Anas clypeata</i> Linnaeus, 1758*	Tp	P, OV	Om	A	AII/A, AIII/B	AIII	AII			LC	
26	<i>Tadorna tadorna</i> (Linnaeus, 1758)*	Mo	OV, RI	Om	O		AII	AII	e	p	LC	
27	<i>Aythya fuligula</i> (Linnaeus, 1758)*	S	OI, OV	Om	A	AII/A, AIII/B	AIII	AII			LC	
28	<i>Aythya ferina</i> (Linnaeus, 1758)*	E	MP	Om	B	AII/A, AIII/B	AIII	AII			VU	
29	<i>Aythya nyroca</i> Güldenstädt, 1770*	E	OV, RI	Om	A	AI	AIII	AI	e	p	NT	A3
30	<i>Bucephala clangula</i> (Linnaeus, 1758)*	S	OI	Om	O	AII/B	AIII	AII		p	LC	
31	<i>Mergus albellus</i> (Linnaeus, 1758)*	S	OI	Ih	O	AI	AII	AII	e	p	LC	
	VI. Order FALCONIFORMES											
	Fam. Accipitridae											
32	<i>Buteo buteo</i> (Linnaeus, 1758)	Tp	MP	CP	O		AII	AII	e		LC	
33	<i>Circus aeruginosus</i> (Linnaeus, 1758)*	Mo	OV, RI	CP	O	AI	AII	AII	e		LC	A3
	Fam. Falconidae											
34	<i>Falco subbuteo</i> Linnaeus, 1758	Tp	OV	CP	A		AII	AII	e		LC	A4B
35	<i>Falco vespertinus</i> Linnaeus, 1766	Mo	OV	CP	O		AII	AII	e	p	NT	A3

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36	<i>Falco tinnunculus</i> Linnaeus, 1758	Tp	MP	CP	B		AII	AII	e		LC	A4B
	VII. Order GALLIFORMES											
	Fam. Phasianidae											
37	<i>Phasianus colchicus</i> Linnaeus, 1758	Ch	S	Om	A	AII/A, AIII/A	AIII				LC	
38	<i>Coturnix coturnix</i> (Linnaeus, 1758)	E	OV	Om	A	AII/B	AIII	AII			LC	
	VIII. Order GRUIFORMES											
	Fam. Rallidae											
39	<i>Porzana porzana</i> Linnaeus, 1766*	E	OV	Om	A	AI	AII	AII	e		LC	A3
40	<i>Gallinula chloropus</i> (Linnaeus, 1758)*	E	OV	Om	A	AII/B	AIII				LC	
41	<i>Fulica atra</i> Linnaeus, 1758*	Tp	MP	Om	C	AII/A, AIII/B	AIII				LC	
	IX. Order CHARADRIIFORMES											
	Fam. Charadriidae											
42	<i>Vanellus vanellus</i> (Linnaeus, 1758)*	Mo	OV	Zoo-P	A	AII/B	AIII		e		NT	
43	<i>Charadrius dubius</i> Scopoli, 1786*	Mo	OV	Zoo-P	A		AII	AII	e		LC	
	Fam. Scolopacidae											
44	<i>Gallinago gallinago</i> (Linnaeus, 1758)*	E	P, ?OV	Zoo-P	O	AII/A, AIII/B	AIII	AII			LC	
45	<i>Limosa limosa</i> (Linnaeus, 1758)*	Mo	P, ?OV	Zoo-P	O	AII/B	AIII	AII	e		NT	
46	<i>Calidris alpina</i> (Linnaeus, 1758)*	AR	P	Zoo-P	O	AI	AIII	AII	e		LC	A3
47	<i>Calidris minuta</i> (Leisler, 1812)*	AR	P	Zoo-P	O		AII	AII	e		LC	
48	<i>Actitis hypoleucos</i> (Linnaeus, 1758)*	Tp	OV	Zoo-P	O		AII	AII	e		LC	
49	<i>Tringa ochropus</i> Linnaeus, 1758*	S	P	Zoo-P	O		AII	AII	e		LC	

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50	<i>Tringa glareola</i> Linnaeus, 1758*	S	P	Zoo-P	O	AI	AII	AII	e		LC	
51	<i>Tringa nebularia</i> (Gunnerus, 1767) *	S	P	Zoo-P	O	AII/B	AIII	AII	e		LC	
52	<i>Philomachus pugnax</i> (Linnaeus, 1758)*	S	P	Zoo-P	O	AI, AII/B	AIII	AII	e		LC	
	Fam. Recurvirostridae											
53	<i>Recurvirostra avosetta</i> Linnaeus, 1758*	Mo	OV	Zoo-P	O	AI	AII	AII	e	p	LC	A3
54	<i>Himantopus himantopus</i> (Linnaeus, 1758)*	Mo	OV	Zoo-P	O	AI	AII	AII	e	p	LC	A3
	Fam. Laridae											
55	<i>Larus argentatus</i> Pontoppidan, 1763*	Tp	S	Zoo-P	O	AII/B	AIII		e		LC	
56	<i>Larus canus</i> Linnaeus, 1758*	S	OI	Zoo-P	O	AII/B	AIII		e		LC	
57	<i>Larus ridibundus</i> Linnaeus, 1766*	Tp	MP	Zoo-P	A	AII/B	AIII		e		LC	
58	<i>Larus minutus</i> Pallas, 1776*	S	P, ?OV	Zoo-P	O	AI	AII		e		LC	A3
59	<i>Chlidonias niger</i> (Linnaeus, 1758)*	E	OV	Zoo-P	O	AI	AII	AII	e		LC	A3
60	<i>Chlidonias hybridus</i> (Pallas, 1811)*	M	OV	Zoo-P	C	AI	AII		e		LC	A3
61	<i>Sterna hirundo</i> Linnaeus, 1758*	E	OV	Zoo-P	C	AI	AII	AII	e		LC	A3
	X. Order COLUMBIFORMES											
	Fam. Columbidae											
62	<i>Columba palumbus</i> Linnaeus, 1758	E	OV, RI	VS	A	AII/A, AIII/A					LC	
63	<i>Streptopelia turtur</i> (Linnaeus, 1758)	E	OV	VS	C	AII/B	AIII	AII		p	VU	
64	<i>Streptopelia decaocto</i> (Frivaldszky, 1838)	M	S	Om	O	AII/B	AIII				LC	
	XI. Order CUCULIFORMES											
	Fam. Cuculidae											

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65	<i>Cuculus canorus</i> Linnaeus, 1758	Tp	OV	In	A		AIII		e		LC	
	XII. Order STRIGIFORMES											
	Fam. Strigidae											
66	<i>Athene noctua</i> (Scopoli, 1769)	Mo	S	Zoo-P	O		AII		e		LC	A4B
	XIII. Order APODIFORMES											
	Fam. Apodidae											
67	<i>Apus apus</i> (Linnaeus, 1758)	E	OV	In	O		AIII		e		LC	
	XIV. Order CORACIIFORMES											
	Fam. Alcedinidae											
68	<i>Alcedo atthis</i> (Linnaeus, 1758)*	E	MP	lh	A	AI	AII		e		LC	A3
	Fam. Meropidae											
69	<i>Merops apiaster</i> Linnaeus, 1758	M	OV	In	O		AII	AII	e		LC	A4B
	Fam. Upupidae											
70	<i>Upupa epops</i> Linnaeus, 1758	E	OV	In	A		AII		e	p	LC	A4B
	XV. Order PICIFORMES											
	Fam. Picidae											
71	<i>Picus canus</i> Gmelin, 1788	E	S	In	O	AI	AII		e		LC	A3
72	<i>Dendrocopos major</i> (Linnaeus, 1758)	Tp	S	In	A		AII		e		LC	
73	<i>Jynx torquilla</i> Linnaeus, 1758	Tp	OV	In	O		AII		e	p	LC	A4B
	XVI. Order PASSERIFORMES											
	Fam. Alaudidae											
74	<i>Galerida cristata</i> (Linnaeus, 1758)	Mo	S	Om	A		AIII		e		LC	
75	<i>Alauda arvensis</i> Linnaeus, 1758	Mo	MP	Om	A	AII/B	AIII				LC	

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	Fam. Hirundinidae											
76	<i>Riparia riparia</i> (Linnaeus, 1758)	Tp	OV	In	A		AII		e		LC	
77	<i>Hirundo rustica</i> Linnaeus, 1758	Tp	OV	In	A		AII		e		LC	
78	<i>Delichon urbica</i> (Linnaeus, 1758)	Tp	OV	In	A		AII		e		LC	
	Fam. Motacillidae											
79	<i>Anthus trivialis</i> (Linnaeus, 1758)	E	OV	In	O		AII		e		LC	
80	<i>Anthus spinoletta</i> (Linnaeus, 1758)	Ti	OV	In	O		AII		e		LC	
81	<i>Anthus pratensis</i> (Linnaeus, 1758)	E	P, OV	In	O		AII		e		NT	
82	<i>Motacilla flava</i> Linnaeus, 1758	Tp	OV	Zoo-P	B		AII		e		LC	A4B
83	<i>Motacilla cinerea</i> Tunstall, 1771*	E	OV, RI	Zoo-P	O		AII		e		LC	A4B
84	<i>Motacilla alba</i> Linnaeus, 1758	E	OV	Zoo-P	C		AII		e		LC	A4B
	Fam. Laniidae											
85	<i>Lanius collurio</i> Linnaeus, 1758	E	OV	In	A	AI	AII		e		LC	A3
86	<i>Lanius excubitor</i> Linnaeus, 1758	Tp	MP, OI	Zoo-P	B		AII		e		LC	
	Fam. Oriolidae											
87	<i>Oriolus oriolus</i> (Linnaeus, 1758)	E	OV	In	A		AII		e		LC	A4B
	Fam. Sturnidae											
88	<i>Sturnus vulgaris</i> Linnaeus, 1758	E	MP	Om	C	AII/B					LC	
	Fam. Corvidae											
89	<i>Garrulus glandarius</i> (Linnaeus, 1758)	E	S	Om	O	AII/B					LC	
90	<i>Pica pica</i> (Linnaeus, 1758)	E	S	Om	C	AII/B					LC	
91	<i>Corvus monedula</i> Linnaeus, 1758	E	S	Om	O	AII/B					LC	

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No.	Orders/ Families/Species	Biogeographic origin	Phenology	Diet	Breeding	Birds Directive (2009/147/CE)	Bern Convention	Bonn Convention	Hunting Law	Red Book	IUCN Red List	Emergency Ordinance 57/2007
92	<i>Corvus frugilegus</i> Linnaeus, 1758	E	S	Om	O	AII/B					LC	
93	<i>Corvus corone cornix</i> Linnaeus, 1758	E	S	Om	A	AII/B					LC	
94	<i>Corvus corax</i> Linnaeus, 1758	Tp	S	Om	A		AIII		e	p	LC	A4B
	Fam. Troglodytidae											
95	<i>Troglodytes troglodytes</i> (Linnaeus, 1758)	E	OV, RI	In	O		AII		e		LC	
	Fam. Prunellidae											
96	<i>Prunella modularis</i> (Linnaeus, 1758)	E	OV, RI	In	O		AII		e		LC	A4B
	Fam. Sylviidae											
97	<i>Locustella luscinioides</i> Savi, 1824*	E	OV	In	A		AIII	AII	e		LC	A4B
98	<i>Acrocephalus schoenobaenus</i> (Linnaeus, 1758)*	E	OV	In	A		AIII	AII	e		LC	
99	<i>Acrocephalus palustris</i> Bechstein, 1798*	E	OV	In	A		AIII	AII	e		LC	
100	<i>Acrocephalus scirpaceus</i> Hermann, 1804*	E	OV	In	A		AIII	AII	e		LC	
101	<i>Acrocephalus arundinaceus</i> (Linnaeus, 1758)*	E	OV	In	A		AIII	AII	e		LC	
102	<i>Sylvia borin</i> Boddaert, 1783	E	OV	In	A		AII	AII	e		LC	
103	<i>Sylvia atricapilla</i> (Linnaeus, 1758)	E	OV	In	A		AII	AII	e		LC	
104	<i>Sylvia communis</i> Latham, 1787	E	OV	In	A		AII	AII	e		LC	
105	<i>Sylvia curruca</i> (Linnaeus, 1758)	E	OV	In	O		AII	AII	e		LC	
106	<i>Phylloscopus collybita</i> Vieillot, 1817	Tp	OV	In	A		AIII	AII	e		LC	A4B
	Fam. Muscicapidae											
107	<i>Ficedula albicollis</i> Temminck, 1815	E	OV	In	O	AI	AII	AII	e		LC	A3

No.	Orders/ Families/Species	Biogeographic origin	Phenology	Diet	Breeding	Birds Directive (2009/147/CE)	Bern Convention	Bonn Convention	Hunting Law	Red Book	IUCN Red List	Emergency Ordinance 57/2007
	Fam. Turdidae											
108	<i>Oenanthe oenanthe</i> (Linnaeus, 1758)	Tp	OV	Zoo-P	O		AII		e		LC	
109	<i>Saxicola rubetra</i> (Linnaeus, 1758)	E	OV	Zoo-P	O		AII		e		LC	
110	<i>Saxicola torquata</i> (Linnaeus, 1766)	Mo	OV	Zoo-P	A		AII		e		LC	
111	<i>Erithacus rubecula</i> (Linnaeus, 1758)	E	OV, RI	Zoo-P	O		AII		e		LC	A4B
112	<i>Luscinia megarhynchos</i> Brehm C. L., 1831	E	OV	In	A		AII		e		LC	
113	<i>Luscinia luscinia</i> (Linnaeus, 1758)	E	OV	In	O		AII		e		LC	
114	<i>Turdus merula</i> Linnaeus, 1758	E	MP	Om	A	AII/B	AIII		e		LC	
115	<i>Turdus philomelos</i> Brehm C.L., 1831	E	OV	Zoo-P	O	AII/B	AIII				LC	
	Fam. Paridae											
116	<i>Parus caeruleus</i> Linnaeus, 1758	E	S	In	C		AII		e		LC	
117	<i>Parus major</i> Linnaeus, 1758	E	S	In	C		AII		e		LC	
	Fam. Remizidae											
118	<i>Remiz pendulinus</i> (Linnaeus, 1758)*	Mo	MP	In	B		AIII		e		LC	A4B
	Fam. Passeridae											
119	<i>Passer domesticus</i> (Linnaeus, 1758)	Tp	S	Om	C				e		LC	
120	<i>Passer montanus</i> (Linnaeus, 1758)	Tp	S	Om	C		AIII		e		LC	
	Fam. Fringillidae											
121	<i>Fringilla coelebs</i> Linnaeus, 1758	E	MP	Om	O		AIII		e		LC	
122	<i>Coccothraustes coccothraustes</i> (Linnaeus, 1758)	E	S	Om	O		AII		e		LC	A4B
123	<i>Carduelis chloris</i> (Linnaeus, 1758)	E	S	VS	C		AII		e		LC	A4B

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No.	Orders/ Families/Species	Biogeographic origin	Phenology	Diet	Breeding	Birds Directive (2009/147/CE)	Bern Convention	Bonn Convention	Hunting Law	Red Book	IUCN Red List	Emergency Ordinance 57/2007
124	<i>Carduelis spinus</i> (Linnaeus, 1758)	E	MP, OI	VS	O		AII		e		LC	A4B
125	<i>Carduelis carduelis</i> (Linnaeus, 1758)	E	S, OI	VS	A		AII		e		LC	A4B
126	<i>Carduelis cannabina</i> (Linnaeus, 1758)	E	MP	VS	A		AII		e		LC	A4B
	Fam. Emberizidae											
127	<i>Emberiza schoeniclus</i> (Linnaeus, 1758)*	Tp	MP	Om	A		AII		e		LC	
128	<i>Miliaria calandra</i> (Linnaeus, 1758)	E	MP	VS	A		AIII		e		LC	A4B
129	<i>Emberiza citrinella</i> Linnaeus, 1758	E	S	Om	O		AII		e		LC	

Legend: * - birds dependent on wetlands; ☐ - possible breeding species, observed outside the optimal period for monitoring; Ar - Arctic species, Ch - Chinese species, E - European species, M - Mediterranean species, Mo - Mongol species, S - Siberian species, Ti - Tibetan species, Tp - Transpalearctic species; MP - partial migrant species, OI - winter visitor, OV - summer visitor, P - passage species, S - resident species, RI - rare in winter species, ? - uncertain; CP - carnivore-predator species, Ih - ichthyophagous species, In - insectivore species, Om - omnivore species, V - vegetarian species, VS - vegetarian-semivore species, Zoo-P - zoophagous-polyphagous species; A - possible breeding, B - probable breeding; C - confirmed breeding, O - non-breeding; AI, AII, AIII - Annex/Appendix I, II, III; A - part A, B - part B; e - species excepted from hunting, p - species presented in the Red Book of the Romanian Vertebrates, LC - Least Concern, NT - near threatened species, VU - vulnerable species; A3 - Annex 3, A4B - Annex 4B.

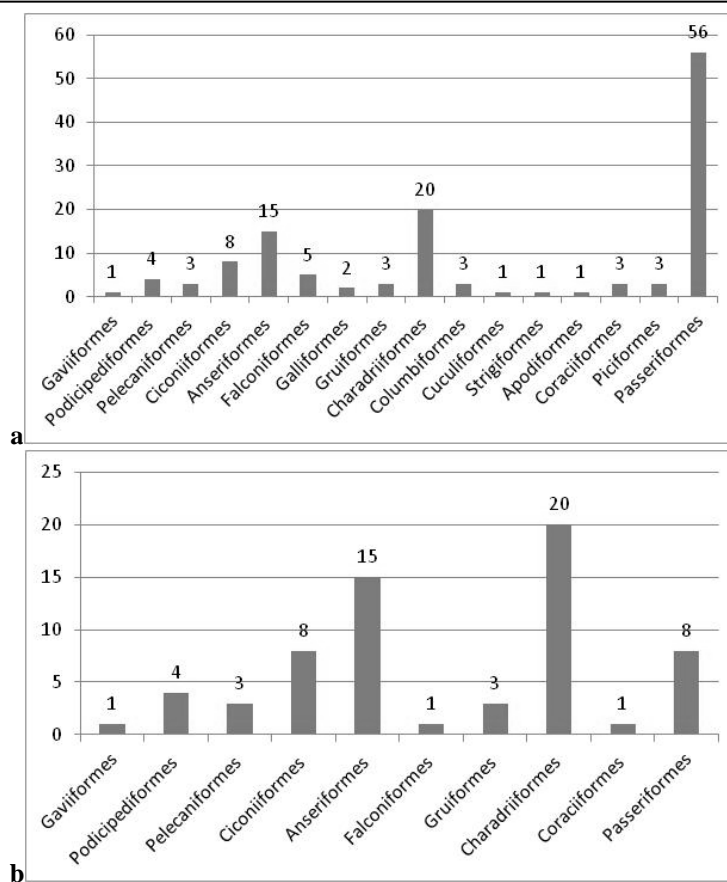


Figure 2 - The repartition of the number of species by orders
(**a** - all species, **b** - the species dependent on wetlands).

Considering the biogeographic origin (Tab. 1), the majority of the species are European and the Transpalearctic species have an important weight, too (however, ca. $\frac{1}{2}$ of the previous ones). The Chinese species and the Arctic species are the least represented (Fig. 4a). In regard of the species dependable on the wetlands must be said that it is a different situation: the European species dominate again, but they are not far away from the Transpalearctic and Siberian species. There are no Tibetan species and the Chinese and Arctic species have the smallest weight (Fig. 4b).

According to the phenology in our country (Tab. 1), the summer or the predominantly summer visitors are the most numerous. They are followed by the resident or predominantly resident species and by partial migrant or predominantly partial migrant species (Fig. 5a). The summer or predominantly summer visitors dominate in the case of the species dependent on wetlands, too, but they are followed by the passage or predominantly passage species, while the resident species have the least importance (Fig. 5b).

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Table 2 - The percentage distribution of the number of species by orders, for all the species and for the species dependent on wetlands.

No.	Orders	All species	Species dependent on wetlands
1	Gaviiformes	0.78	1.56
2	Podicipediformes	3.10	6.25
3	Pelecaniformes	2.33	4.69
4	Ciconiiformes	6.20	12.50
5	Anseriformes	11.63	23.44
6	Falconiformes	3.88	1.56
7	Galliformes	1.55	-
8	Gruiformes	2.33	4.69
9	Charadriiformes	15.50	31.25
10	Columbiformes	2.33	-
11	Cuculiformes	0.78	-
12	Strigiformes	0.78	-
13	Apodiformes	0.78	-
14	Coraciiformes	2.33	1.56
15	Piciformes	2.33	-
16	Passeriformes	43.41	12.50

By the diet (Tab. 1), the zoophagous-polyphagous species are first; they are followed immediately by the insectivore and omnivore species, with the same percent. The vegetarian species have the lowest number (Fig. 6a). In the case of the wetland species, the zoophagous-polyphagous species represent the half of the total and the omnivore species, almost a quarter (Fig. 6b).

Regarding the breeding, some personal considerations about the statute of the species observed between February 2013 and January 2014 were made in some previous papers (Mestecăneanu & Gava, 2014a, 2014b, 2014c, 2014d, 2015a, 2017). Although our attention was not focused on this aspect, according to the breeding criteria used by Romanian Ornithological Society for the Atlas of the Breeding Birds from Romania, we have almost 50% non-breeding species and, over 30%, possible breeding species; the probable breeding species constitute the smallest part, while the certainly breeding species represent only approximately 10 percents (Fig. 7a). The distribution is very similar to the species dependent on wetlands (Fig. 7b).

There are few remarks to be made: *Ciconia ciconia* Linnaeus, 1758 is a breeding species at Budeasa village (one nest at Gălășești and one nest at Rogojina), close to the Budeasa Basin, *Larus argentatus* Pontoppidan, 1763 (subspecies *michahellis*) breeds solely at Pitești, situated next to the Pitești Basin, *Streptopelia decaocto* (Frivaldszky, 1838) breeds all the localities from the vicinity, and *Corvus corax* Linnaeus, 1758 was observed with juveniles on the bank of Vâlcele Basin, but this does not necessarily means that it breeds in the perimeter of the protected area. The Pitești Basin owns the biggest number of breeding species and the Bascov Basin,

the smallest one. Generally, the number of species that depend on the wetlands is almost a half of the whole number on every basin (Tab. 1 and 4).

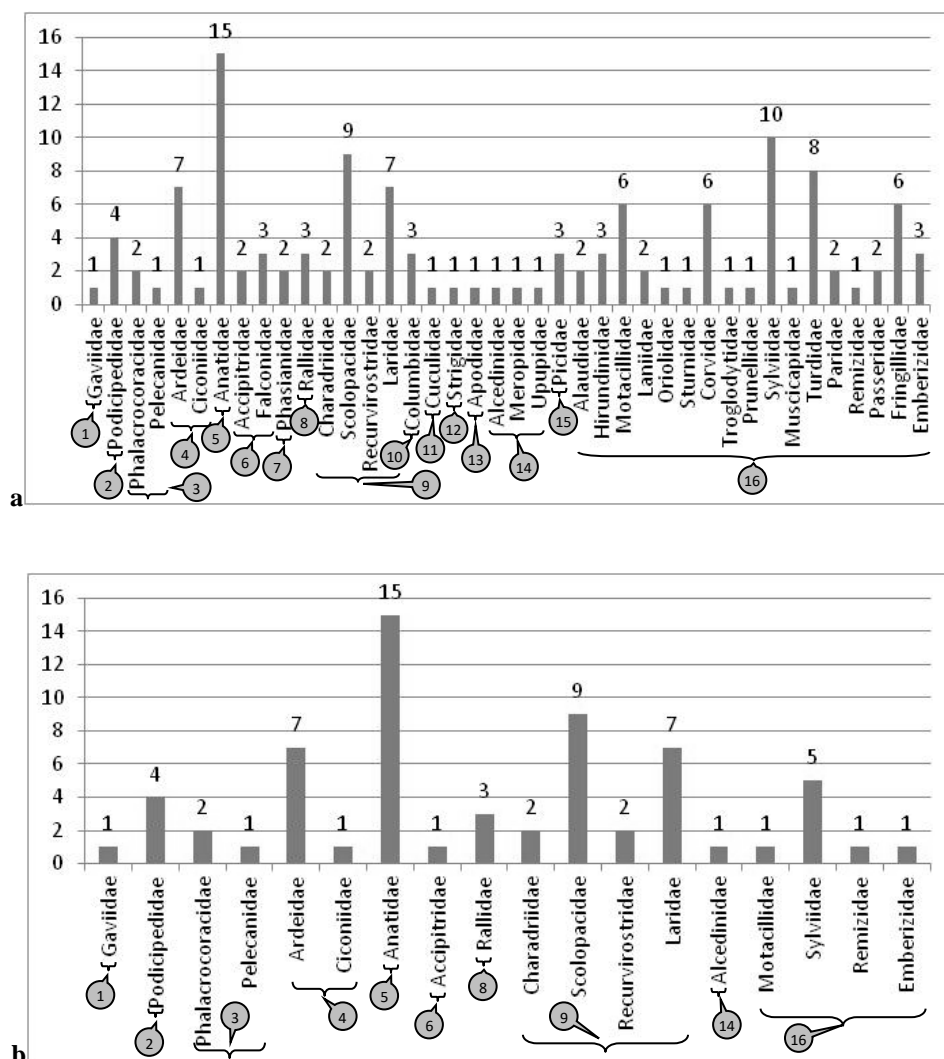


Figure 3 - The repartition of the species by families

(a - all species, b - species dependent on wetlands; 1 - Gaviiformes, 2 - Podicipediformes, 3 - Pelecaniformes, 4 - Ciconiiformes, 5 - Anseriformes, 6 - Falconiformes, 7 - Galliformes, 8 - Gruiformes, 9 - Charadriiformes, 10 - Columbiformes, 11 - Cuculiformes, 12 - Strigiformes, 13 - Apodiformes, 14 - Coraciiformes, 15 - Piciformes, 16 - Passeriformes).

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Table 3 - The percentage distribution of the species by families, for all the species and for the species dependent on wetlands.

No.	Families	All species	Species dependent on wetlands	No.	Families	All species	Species dependent on wetlands
1	Gaviidae	0.78	1.56	21	Meropidae	0.78	-
2	Podicipedidae	3.10	6.25	22	Upupidae	0.78	-
3	Phalacrocoracidae	1.55	3.13	23	Picidae	2.33	-
4	Pelecanidae	0.78	1.56	24	Alaudidae	1.55	-
5	Ardeidae	5.43	10.94	25	Hirundinidae	2.33	-
6	Ciconiidae	0.78	1.56	26	Motacillidae	4.65	1.56
7	Anatidae	11.63	23.44	27	Laniidae	1.55	-
8	Accipitridae	1.55	1.56	28	Oriolidae	0.78	-
9	Falconidae	2.33	-	29	Sturnidae	0.78	-
10	Phasianidae	1.55	-	30	Corvidae	4.65	-
11	Rallidae	2.33	4.69	31	Troglodytidae	0.78	-
12	Charadriidae	1.55	3.13	32	Prunellidae	0.78	-
13	Scolopacidae	6.98	14.06	33	Sylviidae	7.75	7.81
14	Recurvirostridae	1.55	3.13	34	Muscicapidae	0.78	-
15	Laridae	5.43	10.94	35	Turdidae	6.20	-
16	Columbidae	2.33	-	36	Paridae	1.55	-
17	Cuculidae	0.78	-	37	Remizidae	0.78	1.56
18	Strigidae	0.78	-	38	Passeridae	1.55	-
19	Apodidae	0.78	-	39	Fringillidae	4.65	-
20	Alcedinidae	0.78	1.56	40	Emberizidae	2.33	1.56

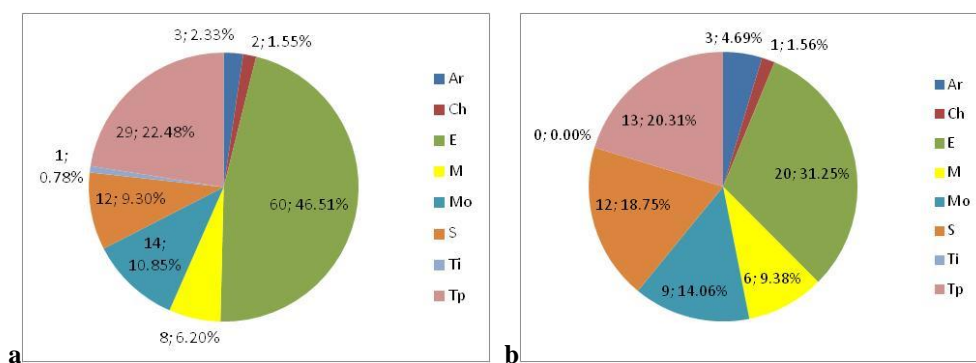


Figure 4 - The absolute and percentage distribution of the species by their biogeographic origin (**a** - all species, **b** - species dependent on wetlands; Ar - Arctic species, Ch - Chinese species, E - European species, M - Mediterranean species, Mo - Mongol species, S - Siberian species, Ti - Tibetan species, Tp - Transpalearctic species).

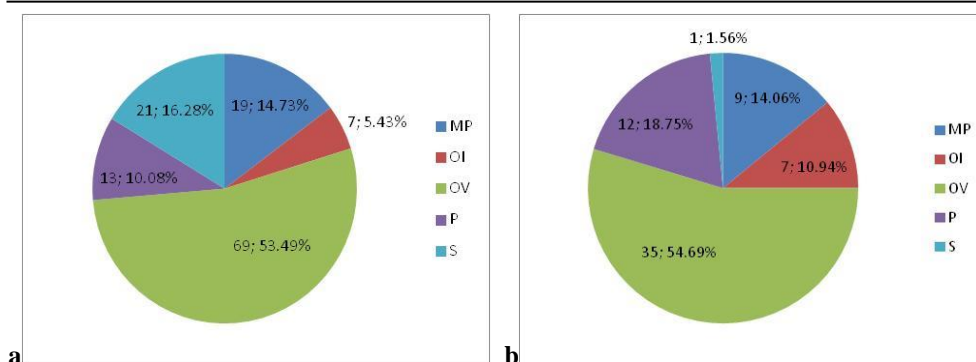


Figure 5 - The absolute and percentage distribution of the species by their phenology (**a** - all species, **b** - species dependent on wetlands; MP - partial migrant species, OI - winter visitor, OV - summer visitor, P - passage species; S - resident species).

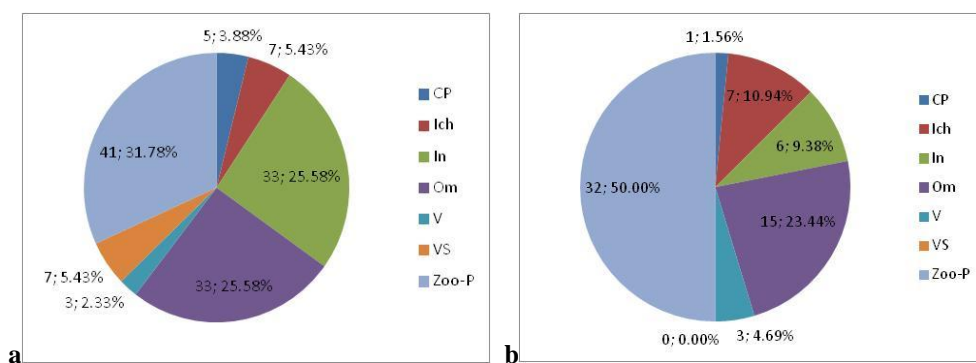


Figure 6 - The absolute and percentage distribution of the species by their diet (**a** - all species, **b** - species dependent on wetlands; CP - carnivore-predator species, Ich - ichthyophagous species, In - insectivore species, Om - omnivore species, V - vegetarian species, VS - vegetarian-seminivore species, Zoo-P - zoophagous-polyphagous species).

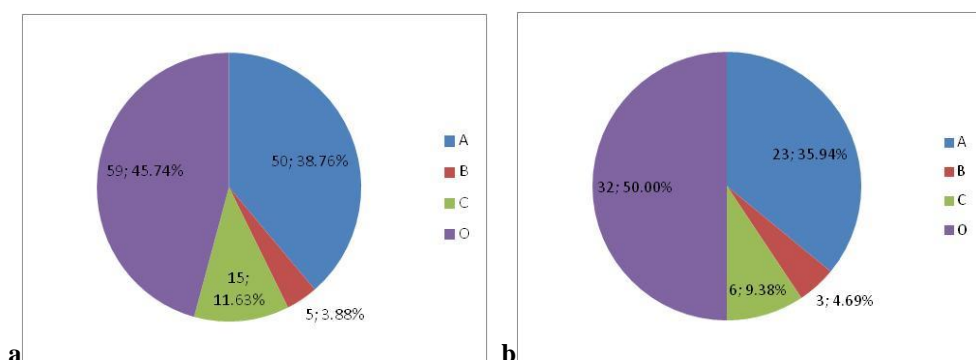


Figure 7 - The absolute and percentage distribution of the species by their status of breeding (**a** - all species, **b** - species dependent on wetlands; A - possible breeding, B - probable breeding, C - confirmed breeding, O - non-breeding).

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Table 4 - The breeding status of the species for every reservoir.

No.	Species	Vâlcele		Budeasa		Bascov		Piteşti		Goleşti	
		Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation
1	<i>Podiceps cristatus</i> *	C12	1ad.+ 2 juv. (19.07)	B3	2 i. (17.05)	A1	1 i. (19.06)	C12	4 juv. (19.07)	B3	10 i. (17.05)
2	<i>Podiceps nigricollis</i> *	A1	2+6 i. (13.04), 2 i. (20.08)					A1	2 i. (19.07)		
3	<i>Tachybaptus ruficollis</i> *	A1	2 i. (20.08)	A1	4 i. (20.08)	A1	3 i. (23.09)	A1	4 i. (19.07)		
4	<i>Phalacrocorax carbo</i> *	A1	105 i. (17.05)	A1	1 i. (17.05)	A1	1 i. (17.05)	A1	1 i. (13.04)	A1	1 i. (17.05)
5	<i>Ixobrychus minutus</i> *							A1	1 i. (17.05)	A1	1 i. (19.07)
6	<i>Egretta garzetta</i> *			A1	1 i. (17.05)	A1	1 i. (19.06)	A1	5 i. (19.06)	A1	27 i. (19.06)
7	<i>Ardeola ralloides</i> *									A1	1 i. (17.05)
8	<i>Ardea cinerea</i> *	A1	2 i. (13.04)	A1	2 i. (17.05)			A1	2 i. (19.06)	A1	7 i. (13.04)
9	<i>Nycticorax nycticorax</i> *	A1	4 i. (19.07)			A1	1 i. (19.06)	A1	1 i. (19.07)	C12	2 ad.+ 3 juv. (19.06)
10	<i>Cygnus olor</i> *			B3	2 i. (19.06)			A1	4 i. (19.06)	A1	6 i. (19.06)
11	<i>Anas platyrhynchos</i> *	B3	2 p. (17.05), 2 p. (19.06)	B3	3 p. (17.05)	B3	6 p. (17.05)	C12	1 ad.+ 6 juv., 1 ad.+ 3 juv. (19.07)	B3	8 i. (17.05)
12	<i>Anas crecca</i> *							A1	4 i. (19.07)		
13	<i>Anas clypeata</i> *									A1	1 i. (19.06)
14	<i>Aythya fuligula</i> *			A1	3 i. (19.06)					A1	50 i. (19.07)

No.	Species	Vâlcele		Budeasa		Bascov		Pitești		Golești	
		Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation
15	<i>Aythya ferina</i> *			A1	3 i. (13.04)	B3	3 p. (17.05)	A1	24 i. (19.06)	A1	130 i. (19.06)
16	<i>Aythya nyroca</i> *							A1	2 i. (19.06)	A1	2 i. (19.06)
17	<i>Falco subbuteo</i>									A1	1 i. (19.06)
18	<i>Falco tinnunculus</i>							A1	1 i. (17.05)	B3	2 i. (17.05)
19	<i>Phasianus colchicus</i>	A1	1 i. (13.04)					A1	1 i. (17.05)		
20	<i>Coturnix coturnix</i>									A2	1 i. (17.05)
21	<i>Porzana porzana</i> *							A1	1 i. (19.07)		
22	<i>Gallinula chloropus</i> *							A1	1 i. (19.06)	A1	1 i. (17.05)
23	<i>Fulica atra</i> *	B3	3 i. (19.06)	B3	2 i. (17.05)	C12	3 juv. (17.05)	C12	1 ad.+ 4 juv. (19.06)	A1	12 i. (17.05)
24	<i>Vanellus vanellus</i> *	A1	1 i. (17.05)							A1	4 i. (19.06)
25	<i>Charadrius dubius</i> *	A1	1 i. (17.05)								
26	<i>Larus ridibundus</i> *	A1	3 i. (13.04)	A1	9 i. (17.05)	A1	19 i. (19.07)			A1	8 i. (19.06)
27	<i>Chlidonias hybridus</i> *	B3	1 p. (19.07)					B3	4 i. (17.05)	C12	2 ad.+ 2 juv. (19.06)
28	<i>Sterna hirundo</i> *			A1	6 i. (17.05)	C12	3 ad.+ 4 juv. (19.07)	A1	3 i. (19.07)	B3	1 p. (19.06)
29	<i>Columba palumbus</i>	A1	7 i. (17.05)	A1	1 i. (19.07)						
30	<i>Streptopelia turtur</i>	C12	2 ad.+ 2 juv. (19.06)								
31	<i>Cuculus canorus</i>									A2	1 i. (17.05)

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No.	Species	Vâlcele		Budeasa		Bascov		Pitești		Golești	
		Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation
32	<i>Alcedo atthis*</i>	A1	2 i. (20.08)	A1	1 i. (21.10)	A1	1 i. (21.10)				
33	<i>Upupa epops</i>	A1	1 i. (19.07)								
34	<i>Dendrocopos major</i>			A1	1 i. (21.10)			A1	1 i. (21.10)		
35	<i>Galerida cristata</i>									A1	1 i. (23.09)
36	<i>Alauda arvensis</i>									A2	3 i. (17.05)
37	<i>Riparia riparia</i>	A1	50 i. (17.05)	A1	6 i. (17.05)	A1	40 i. (17.05)	A1	37 i. (19.06)	A1	40 i. (17.05)
38	<i>Hirundo rustica</i>	A1	15 i. (19.07)	A1	4 i. (19.06)	A1	12 i. (19.06)	A1	7 i. (19.07)	A1	22 i. (17.05)
39	<i>Delichon urbica</i>	A1	16 i. (19.07)	A1	6 i. (19.06)	A1	4 i. (19.07)	A1	17 i. (19.06)	A1	20 i. (19.06)
40	<i>Motacilla flava</i>	A1	12 i. (17.05)	A1	1 i. (19.06)					B3	2 i. (19.06)
41	<i>Motacilla alba</i>	C12	4 juv. (19.06)	A1	1 i. (19.07)	C12	2 juv. (19.07)	B3	4 i. (19.06)	A1	3 i. (19.07)
42	<i>Lanius collurio</i>	A1	2 i. (19.06)	A1	1 i. (17.05)			A1	1 i. (19.07)		
43	<i>Lanius excubitor</i>	B3	2i. (13.04)								
44	<i>Oriolus oriolus</i>			A1	1 i. (19.06)			A1	1 i. (19.06)		
45	<i>Sturnus vulgaris</i>	C12	42 i. with juv. (17.05)					A1	9 i. (19.06)	A1	8 i. (17.05)
46	<i>Pica pica</i>	B3	5 i. (17.05)	C12	3 juv. (19.06)	C12	3 juv. (19.06)	C12	4 juv. (19.06)	C12	4 juv. (19.06)
47	<i>Corvus corone cornix</i>									A1	1 i. (17.05)
48	<i>Corvus corax</i>	A1	3 juv. (17.05)								
49	<i>Locustella luscinioides*</i>							A2	2 i. (13.04)		

No.	Species	Vâlcele		Budeasa		Bascov		Pitești		Golești	
		Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation
50	<i>Acrocephalus schoenobaenus</i> *							A2	1 i. (17.05)		
51	<i>Acrocephalus palustris</i> *	A1	2 i. (19.06)	A1	1 i. (19.06)			A2	7 i. (17.05)	A2	5 i. (19.06)
52	<i>Acrocephalus scirpaceus</i> *							A2	1 i. (19.06)		
53	<i>Acrocephalus arundinaceus</i> *			A1	3 i. (19.06)	A2	3 i. (19.06)	A2	7 i. (17.05)		
54	<i>Sylvia borin</i>							A2	2 i. (19.06)		
55	<i>Sylvia atricapilla</i>			A1	1 i. (19.06)			A2	2 i. (19.06)		
56	<i>Sylvia communis</i>	A1	1 i. (19.06)					A2	1 i. (17.05)	A2	1 i. (17.05)
57	<i>Phylloscopus collybita</i>	A1	1 i. (19.07)	A1	1 i. (19.07)			A1	1 i. (23.09)	A1	1 i. (20.08)
58	<i>Saxicola torquata</i>	A1	1 i. (13.04)								
59	<i>Luscinia megarhynchos</i>	A1	1 i. (19.06)					A2	3 i. (17.05)		
60	<i>Turdus merula</i>	A1	1 i. (19.06)					A1	1 i. (23.03)		
61	<i>Parus caeruleus</i>			C12	3 juv. (19.07)			C12	3 juv. (19.06)		
62	<i>Parus major</i>	C12	7 juv. (20.08)	A1	1 i. (17.05)			A2	2 i. (19.07)		
63	<i>Remiz pendulinus</i> *							B3	2 i. (19.07)	A1	1 i. (19.07)
64	<i>Passer domesticus</i>	A1	4 i. (19.06)	C12	5 juv. (17.05)	C12	6 juv. (19.06)	C12	3 juv. (19.06)	A1	19 i. (19.06)
65	<i>Passer montanus</i>	C12	6 juv. (19.07)	B3	2 i. (17.05)			C12	4 juv. (19.06)	A1	6 i. (19.06)
66	<i>Carduelis chloris</i>	C12	4 juv. (19.07)					C12	4 juv. (19.07)	A1	1 i. (13.04)
67	<i>Carduelis carduelis</i>			A1	2 i. (13.04)			A1	2 i. (19.06)	A1	1 i. (17.05)
68	<i>Carduelis cannabina</i>							A1	2 i. (17.05)	A1	2 i. (13.04)

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No.	Species	Vâlcele		Budeasa		Bascov		Pitești		Golești	
		Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation	Breeding code	Individuals and date of observation
69	<i>Emberiza schoeniclus</i> *							A1	3 i. (13.04)		
70	<i>Miliaria calandra</i>	A2	2 i. (19.06)							A2	4 i. (17.05)
Number of breeding species		38 (14*)		32 (15*)		18 (12*)		49 (25*)		43 (21*)	

Legend: * - species dependent on wetlands; □ - possible breeding species, observed out of the optimal period for monitoring; i. - individual(s), ad. - adult(s), p - pair(s), juv. - juvenile(es); A1 - individuals observed in the breeding period, in suitable habitats for breeding, A2 - singing males seen/heard in the breeding period, B3 - pairs (male and female) in the breeding period in suitable habitat, C12 - recently flown juveniles from the nest (nidicolous species) or downy chicks (nidifugous species).

Tacking into account the distribution of the species on basins, we observe that the weight of the possible breeding species varies between 28.95% (on Bascov) and 44.19% (on Pitești), the one of the probable breeding species varies between 3.49% (on Pitești) and 8.33% (on Budeasa), and the one of the certainly breeding species varies between 3.30% (on Golești) and 13.16% (on Bascov). The non-breeding species fluctuate between 43.02% (on Pitești) and 52.75% (on Golești) (Tab. 5). In case of the species dependant on wetlands (Tab. 6), the minimum and the maximum percents are: 30.19% (on Golești) and 48.78% (on Pitești) for the possible breeding species, 4.88% (on Pitești) and 12.90% (on Budeasa) for the probable breeding species, 0.00% (on Budeasa) and 8.70% (on Bascov) for the certainly breeding species, and 39.02% (on Pitești) and 60.38% (on Golești) for the non-breeding species.

Table 5 - The percentage distribution of the species on every basin, by the status of breeding.

Basin	Possible breeding species (A)		Probable breeding species (B)		Certainly breeding species (C)		Non-breeding species (O)	
	Number	%	Number	%	Number	%	Number	%
Vâlcele	26	38.46	5	7.69	7	12.31	27	41.54
Budeasa	24	40.00	5	8.33	3	5.00	28	46.67
Bascov	11	28.95	2	5.26	5	13.16	20	52.63
Pitești	38	44.19	3	3.49	8	9.30	37	43.02
Golești	35	38.46	5	5.49	3	3.30	48	52.75

Table 6 - The percentage distribution of the species dependent on the wetlands on every basin, by the status of breeding.

Basin	Possible breeding species (A)		Probable breeding species (B)		Certainly breeding species (C)		Non-breeding species (O)	
	Number	%	Number	%	Number	%	Number	%
Vâlcele	10	38.46	3	11.54	1	3.85	12	46.15
Budeasa	11	35.48	4	12.90	0	0.00	16	51.61
Bascov	8	34.78	2	8.70	2	8.70	11	47.83
Pitești	20	48.78	2	4.88	3	7.32	16	39.02
Golești	16	30.19	3	5.66	2	3.77	32	60.38

About the protection, it is interesting that 28 species (21.71%) and 25 (39.06%), in the case of the species dependent on wetlands, are species included in the Annex I of the Birds Directive - the Council Directive 2009/147/EC on the conservation of wild birds (Tab. 1, Fig. 8). Measures for the habitat protection intended to assure their survival and reproduction in their air of distribution must be taken (http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm). Among them, 7 were observed on the Vâlcele basin, 9 on the Budeasa Basin, 9 on the Bascov Basin, 14 on the Pitești Basin, and 21 on the Golești Basin.

By the Bern Convention on the Conservation of European Wildlife and Natural Habitats (<https://www.eea.europa.eu/policy-documents/convention-on-the-conservation-of>), 73 species are included in the Appendix II (strictly protected fauna species) and 48 in the Appendix III (protected fauna species), and by the Bonn Convention on the Conservation of Migratory Species of Wild Animals (<http://www.mmediu.ro/>), 2 species are included in the Appendix I (protected migratory species) and 55 in the Appendix II (migratory species to be the subject of agreements). Conformable to the Law of the Hunting and Game Found Protection 407/2006 (<http://agvps.ro/docs/Legea%20407.pdf>), 103 bird species are excepted from hunting and 38 are hunted periodically. According to the Government Emergency Ordinance No. 57/2007 (<http://www.gnm.ro>), 26 species are in the Annex 3 (species of plants and animals that need the designation of the special protected areas and special areas of avifaunistical protection for conservation) and 23 in the Annex 4B (species of plant and animals of communitarian interest that need a strict protection). In the Red Book of the Romanian Vertebrates (Munteanu, 2005) there are 19 species protected. As respects the species dependent on wetlands, 31 appear in the Appendix II and 33 in the Appendix III of the Bern Convention, 2 species belong to the Appendix I and 42 to the Appendix II of the Bonn Convention, 51 are banned to be hunt and 14 are hunted at regular intervals as stipulated in the Hunting Law, and 22 species appertain to the Annex 3 and 4 to the Annex 4B of the Government Emergency Ordinance No. 57/2007. 14 species figure in the Red Book of the Romanian Vertebrates. The percent's of each are subsequently expressed (Tab. 1, Fig. 9).

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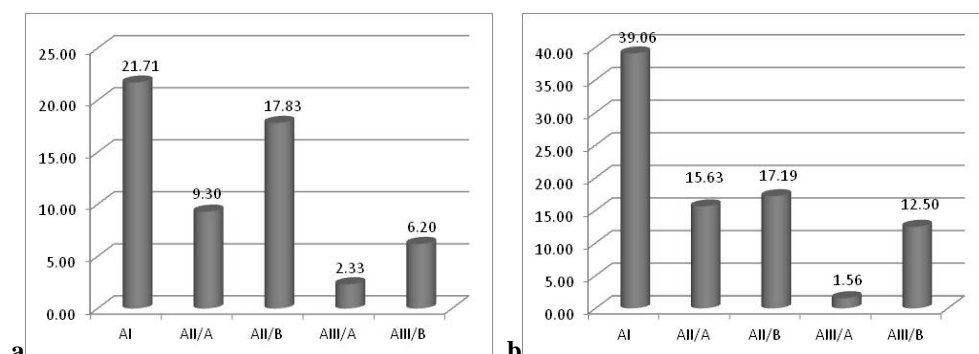


Figure 8 - The percentage distribution of the species by their appurtenance to the annexes of the Birds Directive (**a** - all species, **b** - species dependent on wetlands; AI - Annex I, AII - annex II, AIII - annex III, A - part A, B - part B).

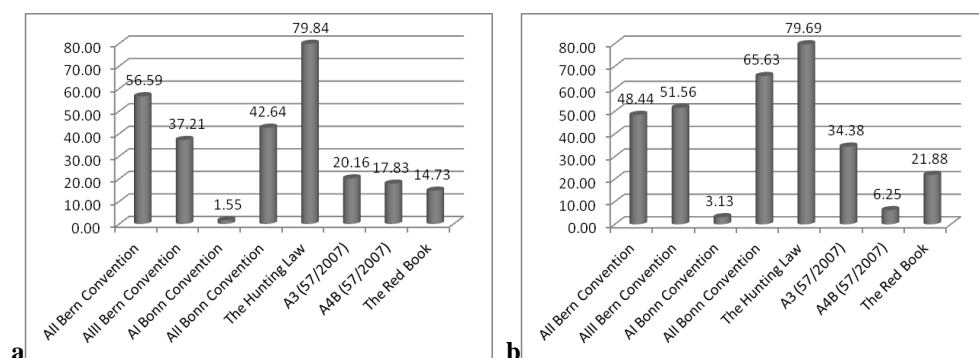


Figure 9 - The percentage distribution of the species by their appurtenance to the annexes of the Bern and Bonn Conventions, the Hunting Law, GEO 57/2007 and the presence in the Red Book of the Romanian Vertebrates (**a** - all species, **b** - species dependent on wetlands; AI - Appendix I, AII - Appendix II, AIII - Appendix III; A3 - Annex 3, A4B - Annex 4B).

According to the IUCN Red List of Threatened Species (<http://www.iucnredlist.org/>), 121 species are considered Least Concern, 5 species are considered Near Threatened and 3 species are considered Vulnerable. In the case of the species dependent on wetlands, the distribution is: 59 - Least Concern, 3 - Near Threatened and 2 - Vulnerable (Tab. 1, Fig. 10).

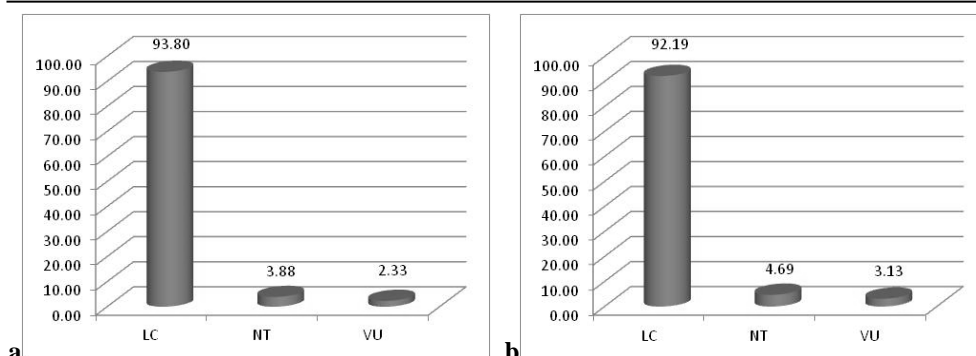


Figure 10 - The percentage distribution of the species by their appurtenance to the IUCN Red List (**a** - all species, **b** - species dependent on wetlands; LC - Least Concern, NT - near threatened species, VU - vulnerable species).

CONCLUSIONS

The avifauna of the basins from the Argeş River between Vâlcele and Goleşti, observed during February 2013 - January 2014, is relatively diverse. The 129 species identified here belong to 16 orders and 40 families. As number of species, the most important order is Passeriformes and the most important family is Anatidae and, for the 64 species dependent on wetlands, which belong to 10 orders and 18 families, the most important order is Charadriiformes and the most important family, again, Anatidae.

The majority of the species are European and Transpalearctic, respectively summer visitors or predominantly summer visitors.

The species with a large animal trophic spectre (zoophagous-polyphagous) dominate even if they are dependent on the wetlands or not.

The non-breeding species have the biggest weight and into this group appear winter visitors or passage species, but, also, summer visitors, partial migrant or resident species, which, principally, came in the area searching for food. Likely, some of them (*Streptopelia decaocto*, *Troglodytes troglodytes*, *Sylvia curruca*, *Erithacus rubecula*, *Turdus philomelos*, *Fringilla coelebs*, and *Emberiza citrinella*) have a certain status of breeding that was not detected.

According to the Birds Directive (Annex I), 28 species (*Gavia arctica*, *Phalacrocorax pygmeus*, *Pelecanus crispus*, *Ixobrychus minutes*, *Egretta garzetta*, *Egretta alba*, *Ardeola ralloides*, *Ardea purpurea*, *Nycticorax nycticorax*, *Ciconia ciconia*, *Cygnus Cygnus*, *Aythya nyroca*, *Mergus albellus*, *Circus aeruginosus*, *Porzana porzana*, *Calidris alpine*, *Tringa glareola*, *Philomachus pugnax*, *Recurvirostra avosetta*, *Himantopus himantopus*, *Larus minutus*, *Chlidonias niger*, *Chlidonias hybridus*, *Sterna hirundo*, *Alcedo atthis*, *Picus canus*, *Lanius collurio*, and *Ficedula albicollis*) have the biggest importance from the conservation point of view, but the list of the protected species is much larger.

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To a certain extent, the percentage of the non-breeding species can be a direct indicator of the negative human pressure on each basin, and, reversely, beside the whole number of species, the percentage of the breeding ones can suggest a better quality of the habitat. Because they are more sensitive to pollution and any kind of derange, in its turn, the amount of the species with a high level of protection can also tell to what extent the basins are affected by the anthropogenic impact. As a result, Bascov seems to be one of the most affected basins by the human pressure while Pitești, although it is situated near the city, is one of the less affected, fact that confirms the conclusions from other papers on the theme (Mestecăneanu & Gava, 2014d, 2016b). Some adequate actions of management must be taken to assure good life conditions for the birds on all the basins.

REFERENCES

- BARCO A., NEDELCU E., 1974 - *Județul Argeș*. Editura Academiei Române. București. 168 p.
- BRUUN B., DELIN H., SVENSSON L., SINGER A., ZETTERSTRÖM D., MUNTEANU D., 1999 - *Păsările din România și Europa. Determinator ilustrat*. Hamlyn Guide. Societatea Ornitologică Română. Octopus Publishing Group Ltd. 320 p.
- CĂTUNEANU I. I., KORODI GÁL I., MUNTEANU D., PAȘCOVSKI S., VESPREMEANU E., 1978 - *Fauna Republicii Socialiste România. Aves (Păsări). Gaviiformes, Podicipediformes, Procelariiformes, Pelecaniformes*. Editura Academiei Republicii Socialiste România. București. **XV (I)**. 318 p.
- CONETE M. D., 2011 - *Cercetări ecologice asupra avifaunei unor lacuri de baraj din zona mijlocie a văii Argeșului*. Teză de doctorat. Institutul de Biologie al Academiei Române. București. 370 p.
- CONETE M. D., GAVA R., MESTECĂNEANU A., 2008 - *Statutul de protecție al păsărilor din zona lacurilor de acumulare de pe râul Argeș*. Scripta Ornithologica Romaniae. Cluj-Napoca. **3**: 68-75.
- CONETE M. D., MESTECĂNEANU A., GAVA R., 2011 - *The breeding bird species from the middle hydrographical basin of the Arges River (Romania)*. Research People and Actual Tasks on Multidisciplinary Sciences. Lozenec. Bulgaria. **3**: 29-34.
- CRAMP S., 2000 - *The complete birds of the western Palearctic*. CD-ROM edition. Oxford University Press. Oxford. UK.
- GAVA R., 1997 - *Acumulările hidroenergetice de pe râul Argeș, posibile Aree de Importanță Avifaunistică*. Lucrările simpozionului Aree de Importanță Avifaunistică din România. Publicațiile S. O. R. Cluj-Napoca. **3**: 39-42.
- GAVA R., MESTECĂNEANU A., CONETE M. D., 2004a - *The reservoirs of the Argeș River valley - important bird areas*. Limnological Reports. International Association for Danube Research. Novi Sad. Serbia and Montenegro. **35**: 619-631.
- GAVA R., MESTECĂNEANU A., CONETE M. D., MESTECĂNEANU F., 2004b - *Recensământul păsărilor de baltă din ianuarie de pe lacurile din bazinul mijlociu al râului Argeș, în perioada 2000 - 2004*. Argessis, Studii și comunicări, Științele Naturii. Muzeul Județean Argeș. Pitești. **12**: 125-132.
- GAVA R., MESTECĂNEANU A., CONETE M. D., 2007 - *The Avifauna of the Middle Basin of Argeș River Artificial Lakes*. Analele Științifice ale Universității "Al. I. Cuza" Iași, s. Biologie animală. Universitatea din Iași. **53**: 187-195.

- GAVA R., MESTECĂNEANU A., CONETE M. D., 2011 - *Species of birds rarely observed In the Important Bird Area "The Dam lakes of the Argeş River" during of the international waterbird Count (1999 - 2012)*. Argesis. Studii şi comunicări, Ştiinţele Naturii. Muzeul Judeţean Argeş. Piteşti. **19**: 79-86.
- MĂTIEŞ M., 1969 - *Cercetări avifaunistice de-a lungul bazinului mijlociu şi superior al Argeşului între 1 ianuarie - 31 mai 1968*. Studii şi comunicări. Muzeul Judeţean Argeş. **2**: 73-90.
- MESTECĂNEANU A., CONETE M. D., GAVA R., 2004 - *Contribuţii la cunoaşterea păsărilor clocitoare din bazinul mijlociu al râului Argeş*. Scripta Ornithologica Romaniae. Cluj-Napoca. **1**: 17-20.
- MESTECĂNEANU A., CONETE M. D., GAVA R., 2010 - *Ecological research - studies regarding the avifauna during the hiemal period from the basins area of the Argeş River between 2000 and 2010*. Annals. Food Science and Tehnology. Universitatea Valahia, Târgovişte. **11 (2)**: 127-135.
- MESTECĂNEANU A., GAVA R., 2013 - *The avifauna from Vâlcele, Budeasa, Bascov, Piteşti and Goleşti basins observed in the prevernal season in 2013*. Argesis. Studii şi comunicări, Ştiinţele Naturii. Muzeul Judeţean Argeş. Piteşti. **XXI**: 71-86.
- MESTECĂNEANU A., GAVA R., 2014a - *Ornithological observations on the Bascov Basin between February 2013 & January 2014*. Drobeta. Seria Ştiinţele Naturii. Muzeul Regiunii Porţilor de Fier. Drobeta Turnu Severin. **XXIV**: 139-154.
- MESTECĂNEANU A., GAVA R., 2014b - *Ornithological observations on the Budeasa Basin between February 2013 and January 2014*. Argesis. Studii şi comunicări, Ştiinţele Naturii. Muzeul Judeţean Argeş. Piteşti. **XXII**: 101-114.
- MESTECĂNEANU A., GAVA R., 2014c - *Ornithological observations on the Vâlcele Basin during February 2013 - January 2014*. Scientific Papers. Current Trends in Natural Sciences. University of Piteşti. Faculty of Sciences. **3 (5)**: 66-77.
- MESTECĂNEANU A., GAVA R., 2014d - *The impact of the anthropogenic pressure on the avifauna from Bascov dam reservoir (Argeş River) in the recent years (2013-2014)*. Argesis. Studii şi comunicări, Ştiinţele Naturii. Muzeul Judeţean Argeş. Piteşti. **XXII**: 89-100.
- MESTECĂNEANU A., GAVA R., 2015a - *Ornithological observations on the Piteşti Dam Basin between February 2013 & January 2014*. Argesis. Studii şi comunicări, Ştiinţele Naturii. Muzeul Judeţean Argeş. Piteşti. **XXIII**: 99-118.
- MESTECĂNEANU A., GAVA R., 2015b - *The avifauna from Vâlcele, Budeasa, Bascov, Piteşti and Goleşti dam reservoirs observed in the autumnal season (2013)*. Drobeta. Seria Ştiinţele Naturii. Muzeul Regiunii Porţilor de Fier. Drobeta Turnu Severin. **XXV**: 103-116.
- MESTECĂNEANU A., GAVA R., 2015c - *The avifauna from Vâlcele, Budeasa, Bascov, Piteşti, and Goleşti dam reservoirs observed in the hiemal season (2013 and 2014)*. Muzeul Olteniei Craiova. Oltenia. Studii şi comunicări. Ştiinţele Naturii. **31 (1)**: 154-165.
- MESTECĂNEANU A., GAVA R., 2016a - *A year of ornithological observations on the Vâlcele, Budeasa, Bascov, Piteşti, and Goleşti dam reservoirs from ROSPA0062 Lacurile de acumulare de pe Argeş*. Muzeul Olteniei Craiova. Oltenia. Studii şi comunicări. Ştiinţele Naturii. **32 (1)**: 97-109.
- MESTECĂNEANU A., GAVA R., 2016b - *The influence of the habitats and anthropogenic pressure on birds, observed during February 2013 - January 2014 on the dam reservoirs from the Argeş River between Vâlcele and Goleşti*.

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BASINS FROM THE ARGEȘ RIVER

- Scientific Papers. Current Trends in Natural Sciences. University of Pitești,
Faculty of Sciences. **5 (9)**: 18-27.
- MESTECĂNEANU A., GAVA R., 2017 - *The Anseriformes from the basins of the Argeș
River between Vâlcele and Golești (Argeș County, Romania) in February 2013 -
January 2014*. Scientific Papers. Current Trends in Natural Sciences. University of
Pitești, Faculty of Sciences. **6 (11)**: 135-147.
- MUNTEANU D., 2005 - *Păsări*. 85-172. In: BOTNARIUC N., TATOLE V. (eds.). Cartea
Roșie a Vertebratelor din România. Academia Română. Muzeul Național de
Istorie Naturală "Grigore Antipa". București.
- MUNTEANU D., MĂTIEȘ M., 1983 - *Modificări induse de lacurile de acumulare în
structura și dinamica avifaunei*. Analele Banatului. Științele Naturii. Muzeul
Banatului. Timișoara. **1**: 217-225.
- STANCU D. I., 2014 - *The vegetation around the accumulation lakes of the Argeș River.
The role of vegetation in the birds life*. Argesis. Studii și comunicări. Seria
Științele Naturii. Pitești. **22**: 21-28.
- ***<http://agvps.ro/docs/Legea%20407.pdf> (accessed: September 20, 2017).
- ***<http://biodiversitate.mmediu.ro> (accessed: September 20, 2017).
- ***http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm (accessed:
September 20, 2017).
- ***<http://www.atlaspasari.ro/> (accessed: September 20, 2017).
- ***<http://www.baraje.ro> (accessed: September 20, 2017).
- ***<http://www.gnm.ro/staticdocs/OUG%2057%20din%202007.pdf> (accessed: September
20, 2017).
- ***<http://www.iucnredlist.org/> (accessed: September 20, 2017).
- ***[http://www.mmediu.ro/beta/wp-content/uploads/2012/07/2012-07-30_legislatie_arii_
protejate_legea89din2000ratificareacordconservarepasariapa.pdf](http://www.mmediu.ro/beta/wp-content/uploads/2012/07/2012-07-30_legislatie_arii_protejate_legea89din2000ratificareacordconservarepasariapa.pdf) (accessed: July
16, 2017).
- ***<https://www.eea.europa.eu/policy-documents/convention-on-the-conservation-of>
(accessed: September 20, 2017).