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The Checklist of Canterno lake. Update to December 2020 (Southern Latium)

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Abstract

This study was carried out in the Canterno lake (Lat 41° 45′ 10,9″ N - Long 13° 15′ 1,5″ E) in the 2018 – 2020 period. 133 species (72 Non-Passerines - 54,5% - and 61 Passerines 46,2%) were recorded. 124 species are in the Red List of Italian breeding birds, 31 species are listed in Annex I of the Directive 2009/147/EC on the conservation of wild birds. The data shows the presences of *Ciconia nigra*, *Coracias garrulus*, *Clamator glandarius*, *Accipiter gentilis*, *Tadorna tadorna*, *Tadorna ferruginea* and the regular migration of *Pandion haliaetus*, *Hieraaetus pennatus*, *Falco vespertinus* and *Ficedula albicollis*. 41 species have a status of resident and breeding; 19 species are summer breeding visitors; 26 are migrant species; 16 species are wintering. The data integrate the last published checklist (Roma & Rossetti 1998) making a review of the water-birds list. The list adopts the systematic classification and the italian common name of the recently check-list of birds of Latium (Brunelli et al., 2019).

Keywords: Checklist, birds, Canterno lake, Latium, Central Italy.

Riassunto

Nel periodo 2018 – 2020 si è svolta una ricerca con obiettivo la redazione di una check-list del lago di Canterno (Lazio, Italia). Mediante rilevamento da 9 punti fissi, posizionati in modo da

coprire l'intero bacino, sono state censite 133 specie: 72 (54,1%) Non Passeriformi e 61 Passeriformi. 116 specie risultano inserite nella Lista Rossa degli Uccelli nidificanti italiani (Gustin et al., 2019) e 31 specie sono elencate nell'Allegato I della Direttiva 2009/147 / CE "Direttiva Uccelli". Risultano presenti 43 specie sedentarie nidificanti; 19 specie nidificanti estive; 34 specie migratrici (M reg, M irr); 4 specie svernanti (W reg, W irr). Data la posizione geografica del bacino lacustre, e nonostante sia di piccole dimensioni, isolato, minacciato dalla pesca sportiva, da una fruizione non regolamentata e dall'inquinamento delle acque, il lago di Canterno si connota come importante area di transito e sosta per numerose specie migratrici e svernanti. Si ritengono interessanti e importanti le osservazioni di *Ciconia nigra*, *Coracias garrulus*, *Clamator glandarius*, *Accipiter gentilis*, *Tadorna tadorna*, *Tadorna ferruginea* e i flussi migratori regolari di *Pandion haliaetus*, *Hieraaetus pennatus*, *Falco vespertinus* e *Ficedula albicollis*. Con la presente ricerca si vuole integrare l'ultima checklist pubblicata (Roma & Rossetti 1998) con conoscenze maggiormente approfondite dell'avifauna lacustre. L'elenco delle specie censite utilizza la classificazione sistematica e il nome comune italiano adottati della check-list degli uccelli del Lazio (Brunelli et al., 2019).

Parole chiave: Checklist, uccelli, Lago di Canterno, Lazio, Italia centrale.

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Introduction

Wetlands play a primary role in the phenological phases of numerous bird species (Fraissinet 2017) and are among the most threatened natural environments in the world (http://ramsar.org). Canterno lake has never been at the center of systematic ornithological studies even if, recently, the avifauna has been studied (Roma & Rossetti 1998) as happened for other lakes in the Frosinone province such as San Giovanni Incarico (Roma & Rossetti 1995) and Posta Fibreno (Puzzanghera 1986). Some ornithological researches involving Canterno lake have been carried out in the context of broader provincial-based researches (Roma & Rossetti 1989, 1990a, 1991, 1992a; Corsetti & D'Orsi 2007) or about studies concerning specific taxa (Roma & Rossetti 1990b, 1992b). The lake has recently been the subject of ornithological researches conducted in Latium (Zapparoli 2011): IWRB censuses, nesting and wintering birds, monitoring of herons, diurnal birds of prey (Boano et al., 1995; Brunelli et al., 2004; Brunelli et al., 2006; De Giacomo & Tinelli 2006; Brunelli et al., 2009; Brunelli et al., 2011; Aradis et al., 2012; Biancolini et al., 2017) and monitoring of *Aquila chrysaetos*, *Falco biarmicus*, *Falco peregrinus* (Borlenghi et al., 2016). This work proposes the update of the check-list of Canterno lake integrating the latest published checklist (Roma & Rossetti 1998) through an exhaustive revision of the list of waterbirds. This work represents to the first results of scientific studies on the Riserva Naturale "Lago di

Canterno", part of the field studies of the "Sylvatica – Associazione Naturalistica". General objective is to provide a contribution to the knowledge of the avifauna of the Ernici Mountains.

Materials and Methods

Study area

Canterno lake (Fig. 1) is the only lake basin of the Ernici Mountains, located in the western hilly belt of the mountain group (latitude: 41 ° 45 '10,9 '' N; longitude: 13 ° 15 '1,5 '' E); is 11 km from Sacco river (to SW) (Fig. 1).

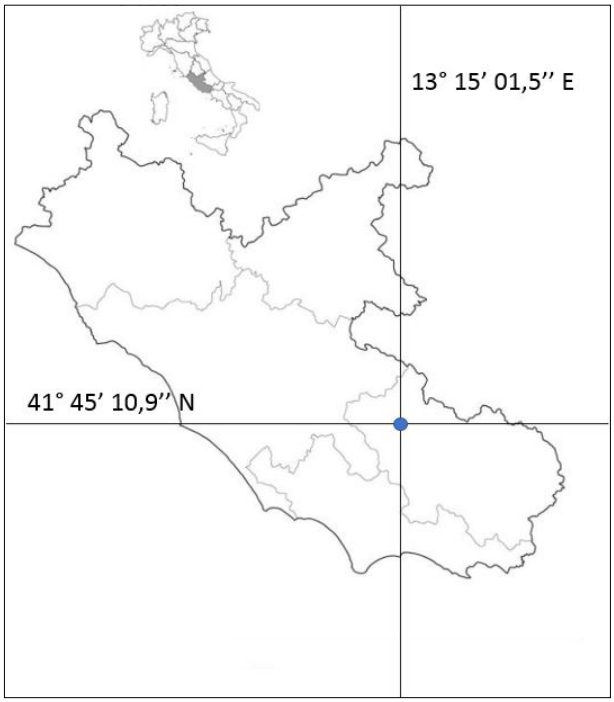

Figure 1: Canterno lake in Latium region.

It is located in the large central flat sector of the Riserva Naturale "Lago di Canterno" (Fig. 2), managed by the Parco Naturale Monti Ausoni and Lago di Fondi and is part of the municipalities of Ferentino (Porciano), Trivigliano and Fumone, in the Frosinone province (Fig. 2).

The main feature of Canterno lake was, for a long time, its periodicity, linked to the filling of the primitive karst basin and its recurrent emptying through the Pertuso sinkhole. This phenomenon was linked to obstruction and unblocking cycles linked to the progressive accumulation of river debris and sediments at the mouth of the karst cavity. Its definitive formation is due to the obstruction of the sinkhole, which took place in 1821. The lake became perennial with the construction of a power plant begun in 1942 by the Società Romana Elettrica (S. R. E.) and completed in 1945; currently the water is controlled by means of an intake tower (Fig. 3).

The basin is located at an altitude of 547 masl, has an area of about 0.6 km^2, an average depth of 15 m and a perimeter of about 5 km. The area belongs to the region with a temperate climate, upper hilly thermotype (submontane), lower hyperhumid ombrotype (Blasi 1994).

The average annual temperature is 12,5° C, is a polimittic lake and is considered hypertrophic for the α chlorophyll values, annually estimated at about 29 µg/l. The phytoplankton community is mainly characterized by Cyanobacteria (genera *Mycrocistis* and *Aphanizomenon*), Chlorophyta (e.g.: *Scenedesmus quadricauda*, *S. obtusus*, *Sphaerocystis schroeteri* and *S. planktonica*) and Cryptophyta (*Cryptomonas erosa* and genus *Rhodomonas*). The planktonic Bacyllariophyta *Cyclostephanos dubius* is present. In the waters or on the banks there are also very interesting botanical entities: *Persicaria amphibia* (L.) Delarbre (*Polygonaceae*), *Herniaria incana* Lam. (*Caryophyllaceae*), *Rorippa palustris* (L.) Besser, *Potentilla supina* L. (*Rosaceae*) and *Ranunculus neapolitanus* Ten.

Figure 2: Canterno Lake, overview; photo by Davide Petrucci.

(*Ranunculaceae*) (Petriglia 2015). The riparian tree cover is fragmented and forming groves in the flooded areas of the Fosso del Diluvio, the only torrential tributary of the lake (Fig. 4).

The tree species are: *Salix alba*, *S. fragilis*, *Populus alba* and *P. nigra*. At a greater distance, the tree cover is composed of deciduous woods dominated by *Quercus cerris*, *Quercus pubescens, Castanea sativa*, *Ostrya carpinifolia*, *Carpinus betulus*, *Fraxinus ornus*, *Acer campestre*, whose shrub expanses consist of *Crataegus monogyna* and *Rubus fruticosus* (Petriglia 2015).

The surrounding plain is used for arable land, with areas regularly mowed or used for grazing. There are 1 autochthonous fish species (*Scardinius erythrophtalmus*) and 1 allochthonous species (*Cyprinus carpio*). For sport fishing the following species were introduced: *Alburnus alborella*, *A. albidus* and *Micropterus salmoides* (Bruno 1983; Roma & Rossetti 1998); *Carassius carassius*, *Ctenopharyngodon idella*, *Tinca tinca* and *Perca fluviatilis* (Culicelli 2017). *Silurus glanis* was introduced in 2018 (https://www.facebook.com/BioBlitzItalia). Other invasive species are reported: *Anodonta cygnea* (Bivalvia: *Unionidae*), *Procambarus clarkii* (Malacostraca: *Cambaridae*), *Trachemys scripta* (Reptilia: *Emydidae*).

Elaboration of checklist

The checklist originates from the need to update the knowledge about the waterbirds

Figure 3: Intake tower; photo by Ermanno De Pisi.

of Canterno lake starting from data of the only published checklist (Roma & Rossetti 1998). This study drafted one checklist relating to the entire area of the Riserva Naturale "Lago di Canterno" (18,2 km²) on the basis of weekly observations over a period of twenty years.

The research was carried out from January 2018 to December 2020. Due to travel restrictions imposed by the SARS-CoV-2 epidemic, activities during the first half of 2020 took over sporadic character. The study was carried out using 9 observation points places along the coast. The census took place through direct observation and through the identification of the songs of the bird species. For species very close to the lake, from the same observation points the census also extended to a coastal strip no wider than 150 meters towards the hinterland.

Every single point was visited at least once a month. 10x binoculars and 20-60x spotting scopes were used. Days with rain, strong wind and fog were avoided to avoid underestimation in the counts (Bibby et al., 2000).

For systematics and nomenclature, the one used in the most recent checklist of the Birds of Latium (Brunelli et al., 2019) has been adopted, which refers to the CISO-COI List (Baccetti et al., 2019).

In order to evaluate the conservation status of breeding species species present in checklist was used and adapted the algorithm of Ornithological Value Index (I.V.O.), elaborated by Massa et al. (2004). Algorithm is the following:

$$\text{I.V.O.} = S_{Tot}\left[\left(S_{Spec1} * 1\right) + \left(S_{Spec2} * 0{,}75\right) + \left(S_{Spec3} * 0{,}5\right) + \left(S_{Non\ SpecE} * 0{,}25\right) + \left(S_{EN} * 0{,}75\right) + \left(S_{VU} * 0{,}5\right) + \left(S_{NT} * 0{,}25\right) + S_6\right] * 100^{-1}$$

Where: S_{Tot} is the number of total breeding species; S_{Spec1}, S_{Spec2}, S_{Spec3}, $S_{Non\ SpecE}$ is the

number of breeding species categorized as SPEC (BirdLife International 2017). Following the most recent IUCN guidelines (IUCN, 2012) was used: S_{EN}, S_{VU}, and S_{NT} are the numbers of breeding species categorized in the Italian Red List of Birds (Gustin et al., 2019); S_6 is the number of breeding species reported in Annex I in Directive on the conservation of wild birds (2009/147/EC).

Figure 4: Environmental context of Canterno lake; photo by Ermanno De Pisi.

Status assessment

The attribution of status categories of the species was assessed on the basis of the data collected in the present research and on the checklist of birds of Latium (Brunelli et al., 2019). The following categories were used:

SB – Sedentary breeding,
B – Summer breeding,
M – Migrant,
W – Wintering,
E – Summer visitor: continuous presence of no resident birds outside the breeding territories;
reg – regular,
irr – irregular,
? – uncertain status,
A – Vagrant: observed only once, with no more than 1 individual (Fasola & Brichetti 1984; Brunelli et al., 2019).
The symbol "S", not flanked by the symbol "B" indicates the species present but nesting outside the study area.

Results and Discussion

133 species were recorded (Tab. 1).

These are divided between 72 Non-Passerines (NP), 54,1% of the total, and 61 Passerines (P); ratio NP / P = 1,18. Compared to the previous checklist of the "Lago di Canterno" Nature Reserve (Roma & Rossetti 1998), which also includes the avifauna of the lake basin, 29 species were not observed during the research and, of these, 14 are in relation with the lake environment.

62 breeding birds were registered (19 summer breeding), including 23 Non-Passerines, 37,1% of the total, and 39 Passerines; ratio NP / P = 0.58. *Anas platyrhynchos*, *Fulica atra*, *Podiceps cristatus* and *Ardea cinerea* are the only nesting lake environment species.

The conservation status in Europe of breeding species is evaluated by SPEC categories (BirdLife International, 2017), as follows: 1 species is in SPEC 1 category; 9 in SPEC 2; 10 in SPEC 3; 42 in NON SPEC[E]. 61 breeding species are included in the Italian Red List (Gustin et al., 2019). These species are divided into the categories: "Endangered - EN" (S: 2), "Vulnerable - VU" (S: 2); "Nearly Threatened - NT" (S: 5), "A Minor Concern - LC" (S: 51), "Insufficient Data - DD" (S: 1) (Table 1). *Phasianus colchicus* is not evaluated in the Italian Red List. 6 species are included in Annex I of Directive 2009/147 / EC "Birds Directive". The Ornithological Value Index (IVO) is equal to 20,46.

37 migratory species (M reg, M irr) were detected; 4 wintering species (W, W irr) were detected: *Rallus aquaticus*, *Periparus ater*, *Melanocorypha calandra* and *Fringilla montifringilla*.

Here are some summary notes of the taxa relating to the lake basin.

Charadriiformes (*Scolopacidae*, *Charadriidae*, *Recurvirostridae*, *Laridae*).

13 migratory species were detected (2018-2020, n.: 46). The presences are sporadic and less numerous compared to the Latium coasts (Spina & Volponi 2008; Brunelli et al., 2009).

The small number of individuals observed is probably due to edaphic factors that characterize the lake. The basin has banks mainly characterized by cinerites (volcanism of the "Latina Valley", Sacco river valley), calcarenites, calcilutites and the presence of eluvial soils and marsh sediments is limited (Alberti et al., 1975).

The correlation between shorebirds presence and the abundance of their prey (e.g.: *Annelida*) is well known however the presence of vegetated silty banks and associated biotic communities, such as to provide rest and food, in the Canterno lake is limited to a few areas of the lake basin.

Actitis hypoleucos, *Tringa ochropus*, *Tringa erythropus*, *Tringa glareola* and *Tringa nebularia* were the most frequent. These species are able to frequent inland wetlands with various banks' types (Brichetti & Fracasso 2004). *Calidris pugnax*, *Calidris ferruginea*, *Calidris alba*, *Calidris minuta* and *Tringa totanus* showed a sporadic presence but are species that only along the coastal areas shows a more regular and conspicuous migratory flow. In inland wetlands with muddy / sandy shores, are very rare and less frequent (Brichetti & Fracasso 2004; Spina & Volponi 2008). Muddy / sandy shores are not present in the Canterno lake.

Larus michahellis is the only *Charadriiformes* present all year round also thanks to a purely trophic "commuting" (groups of 25 - 50

birds) from the "Valle Latina" (Sacco river valley), more evident in winter (January) and at the end of summer (September).

Anseriformes (*Anatidae*).

In the 2018-2020 period, 12 species were detected (1 nesting and 5 wintering) equal to 44,5% of the no accidental *Anatidae* surveyed for Latium (Brunelli et al., 2019). 6 species showed regular presence: *A. platyrhynchos*, *Anas crecca*, *Mareca penelope*, *Spatula clypeata*, *Aythya ferina* and *Aythya nyroca*.

A. platyrhynchos was detected in each census session and was resulted the most abundant (max: 205; 11 December 2018) and the only nesting *Anatidae*; regular migrant. The other abundant species were: *M. penelope* (max: 142; 17 December 2019. Observed in over 15 census sessions) and *A. crecca* (max: 138; 5 January 2018. In 16 sessions). Species less abundant and frequent: *S. clypeata* (max: 57; 5 January 2018. In 23 sessions), *A. ferina* (max: 40; 5 January 2018. In 6 sessions) and *A. nyroca* (max: 19; 18 March 2019. In 4 sessions).

The characteristics of the Canterno lake strongly influence the presence of the lake birds. The lithology of the seabed, the chemical-physical nature of the sediments, the lake water quality and turbidity do not allow diversified lake flora to take up.

These aspects are probably to the base of low abundance ad frequency of "diving ducks" (Brichetti & Fracasso 2004). *Aythya ferina* was the only frequent species (M reg, W reg); the others species (*Aythya nyroca* and *Aythya fuligula*) were much more sporadic.

The eutrophication and water level fluctuations restrict aquatic macrophytes (e.g. *Polygonum amphibium*) to the tributary and its surrounding areas (Lucchese, 2017) and influence presences and distributions of "dabbling ducks" (Brichetti & Fracasso 2001): *M. penelope*, *A. crecca* and *S. clypeata* were regularly detected, during the wintering and the migrations, in areas where is present lake vegetation.

Podicipediformes (*Podicipedidae*).

Podiceps cristatus is the only *Podicipedidae*, present all year round but slightly more abundant during migratory flows and wintering. Mating rituals are already observed in January; adults with eggs and chicks in the period from April to August. *Tachybaptus ruficollis* was observed less frequently. *Podiceps nigricollis* is accidental.

Pelecaniformes (*Ardeidae*).

This taxon consisting of 8 species. *A. cinerea* is the most frequent species, present all year round with relatively numerous groups (20 - 25 indd.). It is the only breeding *Ardeidae*: the small heronry near the lake, present at least since 2012, in 2016 consisted of 7 nests, 6 of which are active (Biancolini et al., 2016). *Nycticorax nycticorax* has been observed only with very few individuals: 2 juv (August 2018), 1 juv (September 2018) and 1 juv (November 2019); however, this species, together with *Egretta garzetta*, is known to be present in the area during the period reproductive (Biancolini et al., 2016). *Ardeola ralloides* is to be considered occasional.

Suliformes (*Phalacrocoracidae*).

Phalacrocorax carbo is the only species present. It's observed throughout the year with variable numbers seasonally and with individuals of various age groups (adults, adults in reproductive dress, immature, young).

Gruiformes (*Rallidae*).

F. atra is the most abundant and frequent species: observed all year round with

relatively high quantities. There is a significant increase during the winter season. It is the only breeding *Rallidae* (April – June period). *Gallinula chloropus* is less frequent, with significant contingents only in January 2019 (n.: 51). *R. aquaticus* is a wintering species.

Accipitriformes (*Pandionidae*), *Falconiformes* (*Falconidae*).

The only species closely related to Canterno lake are strictly migratory and observed mainly in April: *Pandion haliaetus*, *Pernis apivorus* and *Circus aeruginosus*, *Circus pygargus* with single individuals; *Falco vespertinus*, even in relatively numerous groups (n.: 10-20). Other species exploit the lake for trophic purposes: *Milvus migrans*, *Accipiter nisus*, *Buteo buteo*, *F. peregrinus*. *Accipiter gentilis* is to be considered an accidental species.

The current management of the protected area tends to re-naturalize the entire natural environment with the aim of making coexistence with human activities possible (Copiz 2017). Despite the great naturalistic value and, in perspective, the economic importance for local populations, the basin is oppressed by a vast series of threats, not duly monitored except by local environmental associations and individual citizens. The greatest risks lie in the pollution of the water mainly due to the urban wastewater that flows into the basin through the riverbed of the Fosso del Diluvio: in the last decades, and also recently (2017, 2020), several "crises" have occurred which have also led to the flowering of toxic microalgae with a strong impact on fish fauna. To these factors have to be added the presence of various materials, illegal fishing and construction near the banks. There are no acts of poaching but there are attempts to allocate the protected area to recreational and recreational activities (rowing school, sailing school, etc.). Low-altitude helicopter flights are planned for military exercises carried out by the armed forces ("Esercito Italiano") and by institutional agencies ("Vigili del Fuoco"). Private aircraft are also observed. All this makes it important to initiate more effective protection and safeguard measures, also aimed at promoting a better naturalistic use of the territory and a greater awareness of the naturalistic importance of the lake by local populations.

Table 1: Checklist of birds of Canterno lake updated to 31st December 2020.

	Scientific name	English common name	Italian common name	Fenology	Dir. 2009/147 /EC Annex I	Status in Europe (SPEC categories)	Italian Red List categories
	GALLIFORMES						
	Phasianidae						
1	*Coturnix coturnix*	Common Quail	Quaglia	M reg, B		3	DD
2	*Phasianus colchicus*	Common Pheasant	Fagiano	SB			
	ANSERIFORMES						
	Anatidae						
3	*Anser anser*	Greylag Goose	Oca selvatica	M irr			LC
4	*Tadorna tadorna*	Common Shelduck	Volpoca	A			VU
5	*Tadorna ferruginea*	Ruddy Shelduck	Casarca	A	X	3	
6	*Aythya ferina*	Common Pochard	Moriglione	M reg, W reg		1	VU
7	*Aythya nyroca*	Ferruginous Duck	Moretta tabaccata	M reg, W irr	X	1	EN
8	*Aythya fuligula*	Tufted Duck	Moretta	M irr		3	VU
9	*Spatula querquedula*	Garganey	Marzaiola	M reg		3	VU
10	*Spatula clypeata*	Norhern Shoveler	Mestolone	M reg, W reg			VU
11	*Mareca strepera*	Gadwall	Canapiglia	M irr			NT
12	*Mareca penelope*	Wigeon	Fischione	M reg, W irr			
13	*Anas platyrhynchos*	Mallard	Germano reale	SB, M reg, W reg			LC
14	*Anas crecca*	Teal	Alzavola	M reg, W reg			EN
	PODICIPEDIFORMES						
	Podicipedidae						

15	*Tachybaptus ruficollis*	Little Grebe	Tuffetto	M reg, E irr, W irr			LC
16	*Podiceps cristatus*	Graet Crested Grebe	Svasso maggiore	SB, M reg, W reg			LC
17	*Podiceps nigricollis*	Black-necked Grebe	Svasso piccolo	A			
	PHOENICOPTERIFORMES						
	Phoenicopteridae						
18	*Phoenicopterus roseus*	Graeater Flamingo	Fenicottero	A			LC
	COLUMBIFORMES						
	Columbidae						
19	*Columba palumbus*	Common Wood Pidgeon	Colombaccio	SB, M reg, W reg			LC
20	*Streptopelia decaocto*	Eurasian Collared Dove	Tortora dal collare	SB			LC
21	*Streptopelia turtur*	European Turtle Dove	Tortora selvatica	B, M reg		1	LC
	CAPRIMULGIFORMES						
	Caprimulgidae						
22	*Caprimulgus europaeus*	European Nightjar	Succiacapre	M reg, B	X	3	LC
	Apodidae						
23	*Apus apus*	Common Swift	Rondone comune	M reg, B		3	LC
	CUCULIFORMES						
	Cuculidae						
24	*Clamator glandarius*	Great Spotted Cuckoo	Cuculo dal ciuffo	A			EN
25	*Cuculus canorus*	Common Cuckoo	Cuculo	M reg, B			LC
	GRUIFORMES						
	Rallidae						
26	*Rallus aquaticus*	Water Rail	Porciglione	W reg			LC
27	*Gallinula chloropus*	Common Moorhen	Gallinella d'acqua	SB, M reg, W reg			LC
28	*Fulica atra*	Eurasian Coot	Folaga	M reg, W reg		3	LC

	Gruidae						
29	*Grus grus*	Common Crane	Gru	M reg	X		RE
	CICONIIFORMES						
	Ciconiidae						
30	*Ciconia nigra*	Black Stork	Cicogna nera	A?	X		EN
	Ardeidae						
31	*Ixobrychus minutus*	Little Bittern	Tarabusino	M irr	X	3	VU
32	*Nycticorax nycticorax*	Black-crowned Night Heron	Nitticora	E?, M reg?	X	3	LC
33	*Ardeola ralloides*	Squacco Heron	Sgarza ciuffetto	M reg, E irr, W irr	X	3	NT
34	*Bubulcus ibis*	Western Cattle Heron	Airone guardabuoi	A			LC
35	*Ardea cinerea*	Grey Heron	Airone cenerino	SB, M reg, E, W reg			LC
36	*Ardea purpurea*	Purple Heron	Airone rosso	M irr	X	3	LC
37	*Ardea alba*	Great Egret	Airone bianco maggiore	M reg, E, W	X		NT
38	*Egretta garzetta*	Little Egret	Garzetta	M reg, E, W	X		LC
	SULIFORMES						
	Phalacrocoracidae						
39	*Phalacrocorax carbo*	Great Cormorant	Cormorano	S			CR
	CHARADRIIFORMES						
	Recurvirostridae						
40	*Himantopus himantopus*	Black -winged Stilt	Cavaliere d'Italia	M reg	X		LC
	Charadriidae						
41	*Vanellus vanellus*	Northern Lapwing	Pavoncella	M reg		1	LC
	Scolopacidae						
42	*Calidris pugnax*	Ruff	Combattente	M reg	X	2	
43	*Calidris ferruginea*	Curlew Sandpiper	Piovanello comune	M irr		1	
44	*Calidris alba*	Sanderling	Piovanello tridattilo	M irr			

45	*Calidris minuta*	Little Stint	Gambecchio comune	M reg			
46	*Actitis hypoleucos*	Common Sandpiper	Piro piro piccolo	M reg		3	NT
47	*Tringa ochropus*	Green Sandpiper	Piro piro culbianco	M reg			
48	*Tringa erythropus*	Spotted Redshank	Totano moro	M reg		3	
49	*Tringa nebularia*	Common Greenshank	Pantana	M reg			
50	*Tringa glareola*	Wood Sandpiper	Piro piro boschereccio	M reg	X	3	
	Laridae						
51	*Larus michahellis*	Yellow-legged Gull	Gabbiano reale	S			LC
52	*Chlidonias niger*	Black Tern	Mignattino comune	M reg	X	3	CR
	STRIGIFORMES						
	Strigidae						
53	*Athene noctua*	Little Owl	Civetta	SB		3	LC
	ACCIPITRIFORMES						
	Pandionidae						
54	*Pandion haliaetus*	Western Osprey	Falco pescatore	M reg	X		
	Accipitridae						
55	*Pernis apivorus*	European Honey Buzzard	Falco pecchiaiolo	B, M reg	X		LC
56	*Hieraaetus pennatus*	Booted Eagle	Aquila minore	M reg	X		
57	*Circus aeruginosus*	Western Marsh Harrier	Falco di palude	M reg	X		VU
58	*Circus pygargus*	Montagu's Harrier	Albanella minore	M irr	X		VU
59	*Accipiter nisus*	Eurasian Sparrowhawk	Sparviere	SB, M reg, W irr			LC
60	*Accipiter gentilis*	Northern Goshawk	Astore	A?	X		LC
61	*Milvus migrans*	Black Kite	Nibbio bruno	M reg, B	X	3	LC
62	*Buteo buteo*	Common Buzzard	Poiana	SB, M reg, W reg			LC
	BUCEROTIFORMES						
	Upupidae						

63	*Upupa epops*	Eurasian Hoopoe	Upupa	M reg, B			LC
	CORACIIFORMES						
	Meropidae						
64	*Merops apiaster*	European Bee-eater	Gruccione	M reg			LC
	Coraciidae						
65	*Coracias garrulus*	European Roller	Ghiandaia marina	A?	X	2	LC
	Alcedinidae						
66	*Alcedo atthis*	Common Kingfisher	Martin pescatore	M reg, W irr	X	3	LC
	PICIFORMES						
	Picidae						
67	*Picus viridis*	European Green Woodpecker	Picchio verde	SB			LC
68	*Dendrocopos major*	Great Spotted Woodpecker	Picchio rosso maggiore	SB			LC
	FALCONIFORMES						
	Falconidae						
69	*Falco tinnunculus*	Common Kestrel	Gheppio	SB, M reg, W reg		3	LC
70	*Falco vespertinus*	Red-footed Falcon	Falco cuculo	M reg	X	1	VU
71	*Falco subbuteo*	Eurasian Hobby	Lodolaio	M reg, B			LC
72	*Falco peregrinus*	Peregrine Falcon	Pellegrino	SB	X		LC
	PASSERIFORMES						
	Laniidae						
73	*Lanius collurio*	Red-backed Shrike	Averla piccola	M reg, B	X	2	VU
74	*Lanius senator*	Woodchat Shrike	Averla capirossa	M reg, B		2	EN
	Corvidae						
75	*Garrulus glandarius*	Eurasian Jay	Ghiandaia	SB			LC
76	*Pica pica*	Eurasian Magpie	Gazza	SB			LC
77	*Corvus monedula*	Western Jackdaw	Taccola	S			LC

78	*Corvus coronae*	Hooded Crow	Cornacchia	SB			LC
	Paridae						
79	*Periparus ater*	Coal Tit	Cincia mora	W reg			LC
80	*Cyanistes caeruleus*	Eurasian Blue Tit	Cinciarella	SB			LC
81	*Parus major*	Great Tit	Cinciallegra	SB			LC
	Alaudidae						
82	*Melanocorypha calandra*	Calandra Lark	Calandra	W irr	X	3	VU
83	*Lullula arborea*	Woodlark	Tottavilla	M reg	X	2	LC
84	*Alauda arvensis*	Eurasian Skylark	Allodola	SB, M irr		3	NT
	Cisticolidae						
85	*Cisticola juncidis*	Zitting Cisticola	Beccamoschino	SB, M irr			LC
	Acrocephalidae						
86	*Hippolais polyglotta*	Melodious Warbler	Canapino comune	M reg, B			LC
	Hirundinidae						
87	*Delichon urbicum*	Common House Martin	Balestruccio	M reg, B		2	NT
88	*Hirundo rustica*	Barn Swallow	Rondine	M reg, B		3	NT
89	*Riparia riparia*	Sand Martin	Topino	M reg		3	VU
	Phylloscopidae						
90	*Phylloscopus collybita*	Common Chiffchaff	Luì piccolo	M reg, B			LC
	Scotocercidae						
91	*Cettia cetti*	Cetti's Warbler	Usignolo di fiume	SB, W reg			LC
	Aegithalidae						
92	*Aegithalos caudatus*	Long-tailed Tit	Codibugnolo	SB, W reg			LC
	Sylviidae						
93	*Sylvia atricapilla*	Eurasian Blackcap	Capinera	SB, M reg, W reg			LC

94	*Sylvia borin*	Garden Warbler	Beccafico	M reg			VU
95	*Sylvia melanocephala*	Sardinian Warbler	Occhiocotto	SB, M reg, W reg			LC
96	*Sylvia cantillans*	Eastern Subalpine Warbler	Sterpazzolina comune	M reg, B			LC
	Certhiidae						
97	*Certhia bachydactyla*	Short-toed Treecreeper	Rampichino comune	SB			LC
	Troglodytidae						
98	*Troglodytes troglodytes*	Eurasian Wren	Scricciolo	SB, M reg, W reg			LC
	Sturnidae						
99	*Sturnus vulgaris*	Common Starling	Storno	SB, M reg		3	LC
	Turdidae						
100	*Turdus viscivorus*	Mistle Thrush	Tordela	SB, M reg, W reg			LC
101	*Turdus philomelos*	Song Thrush	Tordo bottaccio	M reg			LC
102	*Turdus merula*	Common Blackbird	Merlo	SB, M reg, W reg			LC
	Muscapidae						
103	*Muscicapa striata*	Spotted Flycatcher	Pigliamosche	M reg, B		2	LC
104	*Erithacus rubecula*	European Robin	Pettirosso	SB, M reg, W reg			LC
105	*Luscinia megarhynchos*	Common Nightingale	Usignolo	M reg, B			LC
106	*Ficedula albicollis*	Collared Flycatcher	Balia dal collare	M reg	X		LC
107	*Phoenicurus ochruros*	Black Redstart	Codirosso spazzacamino	SB, M reg, W reg			LC
108	*Saxicola rubetra*	Whinchat	Stiaccino	M reg		2	VU
109	*Saxicola torquatus*	European Stonechat	Saltimpalo	SB, M reg, W reg			EN
110	*Oenanthe oenanthe*	Northern Wheatear	Culbianco	M reg		3	LC
111	*Oenanthe hispanica*	Western Black-eared Wheatear	Monachella	A			DD
	Prunellidae						
112	*Prunella modularis*	Dunnock	Passera scopaiola	M reg, W reg			NT

	Passeridae						
113	*Passer italiae*	Italian Sparrow	Passera d'Italia	SB		2	NT
114	*Passer montanus*	Eurasian Tree Sparrow	Passera mattugia	SB, M reg, W reg		3	LC
	Motacillidae						
115	*Anthus pratensis*	Meadow Pipit	Pispola	M reg, W reg		1	
116	*Anthus spinoletta*	Water Pipit	Spioncello	M reg, W reg			LC
117	*Anthus campestris*	Tawny Pipit	Calandro	M reg		3	VU
118	*Motacilla flava*	Western Yellow Wagtail	Cutrettola	M reg		3	LC
119	*Motacilla cinerea*	Grey Wagtail	Ballerina gialla	M reg, W reg			LC
120	*Motacilla alba*	White Wagtail	Ballerina bianca	SB, M reg			LC
	Fringillidae						
121	*Fringilla coelebs*	Common Chaffinch	Fringuello	SB, M reg, W reg			LC
122	*Fringilla montifringilla*	Brambling	Peppola	W irr		3	
123	*Coccothraustes coccothraustes*	Hawfinch	Frosone	M reg, W reg			LC
124	*Chloris chloris*	European Greenfinch	Verdone	SB, M reg, W reg			NT
125	*Linaria cannabina*	Common Linnet	Fanello	SB, M reg, W reg		2	LC
126	*Carduelis carduelis*	European Goldfinch	Cardellino	SB, M reg, W reg			LC
127	*Serinus serinus*	European Serin	Verzellino	SB, M reg, W reg		2	LC
128	*Spinus spinus*	Eurasian Siskin	Lucherino	M irr, W irr			LC
	Emberizidae						
129	*Emberiza calandra*	Corn Bunting	Strillozzo	SB		2	LC
130	*Emberiza cia*	Rock Bunting	Zigolo muciatto	M reg, W reg			LC
131	*Emberiza hortulana*	Ortolan Bunting	Ortolano	M reg, B	X	2	VU
132	*Emberiza cirlus*	Cirl Bunting	Zigolo nero	SB			LC
133	*Emberiza citrinella*	Yellowhammer	Zigolo giallo	M irr?		2	VU

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Author contributions

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