

Avifauna of “Sicilian southeast swamp lakes” and surroundings areas (Ragusa and Syracuse, Sicily) with commented records of interest

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ABSTRACT

The complex of “Sicilian southeast swamp lakes” represents one of the most important wetland of Sicily and south of Italy for many species of birds. A specific, detailed and complete bird checklist of such an important area was never published, so, data were collected on the field from January 2015 to May 2021 and 226 different species were recorded, thanks to weekly bird census funded and promoted by the German foundation Stiftung Pro Artenvielfalt, owner of the two biggest swamp lakes. In addition, data related to 18 additional species recorded in the same area were collected from bibliographic sources and personal communications from other ornithologists and birdwatchers, for a total of 244 species, of which 74 breeding in the area. A first complete checklist is presented in this paper, as well as the remarks of 44 of the most interesting, relevant or unusual bird records, including the most accurate and up-to-date estimates of breeding pairs of *Marmaronetta angustirostris*, *Aythya nyroca* and *Porphyrio porphyrio* in the study area.

KEY WORDS

Checklist; *Marmaronetta angustirostris*; Pantano Cuba; Pantano Longarini; Stiftung Pro Artenvielfalt.

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INTRODUCTION

The Sicilian southeast swamp lakes area, located in the southeast coast of Sicily, represents the southernmost Italian wetland-complex and one of the most important coastal wetlands of southern Europe. The swamp lakes (locally called “Pantani”), are located along the coast, involving the provinces of Ragusa and Syracuse, and the municipalities of Ispica, Pachino, Noto and Portopalo di Capo Passero. There are more than ten different swamp lakes (Fig. 1) with different features and extension, depth and salinity. From East to West, the most important are:

Pantano Marzamemi - Pachino, Syracuse (36°44'32.01"N; 15° 6'56.64"E);

Salina Morghella - Portopalo di Capo Passero, Syracuse (36°42'7.91"N; 15° 6'48.62"E);

Pantano Ponterio - Porto Palo di Capo Passero, Syracuse (36°39'46.48"N; 15° 4'9.09"E);

Pantano Ciaramiraro - Porto Palo di Capo Passero, Syracuse (36°40'6.58"N; 15° 4'7.05"E);

Pantano Baronello - Pachino, Syracuse (36°40'29.54"N; 15° 3'31.87"E);

Pantano Auruca - Pachino, Syracuse (36°41'4.30"N; 15° 3'4.94"E);

Pantano Cuba - Pachino, Syracuse (36°42'27.55"N; 15° 1'38.77"E);

Pantano Longarini - Ispica, Ragusa (36°42'36.78"N; 14°59'59.23"E) / Pachino, Syracuse (36°42'41.27"N; 15° 0'42.34"E);

Pantano Bruno - Ispica, Ragusa (36°41'56.72"N; 14°58'55.58"E);

Gorgo Salato - Ispica, Ragusa (36°41'43.29"N; 14°58'30.89"E).

The whole wetland-complex extends for about 1600 hectares and is included in Natura 2000 as Special Areas of Conservation (SACs ITA090003) and Special Protection Areas (SPAs ITA090029), designated respectively under the Habitats Directive (Directive 92/43/EEC of 21 May 1992) and the Birds Directive (Directive 79/409/EEC of 2 April 1979 and 2009/147/EC of 30 November 2009). Since the wetland is located along the Central Mediterranean migratory route, it is interested by the migration of millions of birds every year, and, due to the local climatic conditions, during the winter it represents a very important wintering site for many species of water birds raptors and passerines. Despite its importance and protection, the whole area has been affected for decades by poaching, illegal fishing and many other illegal activities. In order to definitively stop these serious threats, Pantano Cuba and Pantano Longarini (Fig. 2) were bought, starting from 2013, by the German foundation "Stiftung Pro Artenvielfalt ®" - Foundation Pro Biodiversity, for a total, up to date, of about 360 hectares. The foundation is specialized on biodiversity conservation, protection and habitat management. The same foundation has promoted and funded weekly bird census in the area, allowing to obtain the most of results published in this paper.

MATERIAL AND METHODS

Starting from January 2015 up to May 2021, weekly bird census have been carried out in the study area, mostly focused on Gorgo Salato, Pantano Bruno, Pantano Cuba and Pantano Longarini, but occasionally also extended to nearby areas of interest, as the other swamp lakes, fields, meadows, orchards and along the coastline, including the small harbour of Portopalo di Capo Passero (Syracuse) and the bay of Porto Ulisse (Ragusa). Please notice that, despite it is included in the same SPAs, the area of the nature reserve of Vendicari (Noto, Syracuse)

has not been considered for this survey, since a recent updated checklist and surveys are available (Ientile & Iapichino, 2010; Ientile et al., 2011).

The bird census have been performed by the authors once for week, for each season and throughout the years, using telescopes and binoculars and watching from fixed observation points, in presence of good weather conditions. To the data directly collected from the authors, additional data have been added by means of bibliographical research or from personal communications of birdwatchers and ornithologists. In this paper, a first detailed and complete checklist of the bird species of this area is presented, but only records considered "of interest" have been commented. The criteria used for the selection of commented species have been:

Species with low numbers and records for Sicily, generally or during the winter/migration;

Uncommon/rare species for which the study area represents an important breeding/wintering/migratory site;

Unusual number recorded;

Species with lack of recent published data.

Taxonomy follow the last Italian bird checklist (Baccetti et al., 2020) and English names follow the last World Bird List (Gill et al., 2020). The bird phenology utilised follow Brichetti & Fracasso (2015) using the codes: SB = Sedentary breeder; B = Breeder; M = migratory; W = Wintering; A = Accidental; reg = regular; irr = irregular.

IUCN categories follow the IUCN guidelines (2017) and the Red List of Italian breeding birds (Gustin et al., 2019).

RESULTS

From January 2015 to May 2021, 226 different species of birds were recorded in the study area. In addition, 18 species were added after consulting available bibliographic sources and sharing data with other birdwatchers and ornithologists, for a total of 244 species.

All the species are listed in the Table 1. Please note that the phenology reported is exclusively related to the study area and collected data.

Hereafter, we also report short remarks related to the more interesting and important observations. If data have not been collected by authors, observer is always specified in brackets.



Figure 1. Geographical location of the study area and of main Sicilian southeast swamp lakes along the coast (modified from: Guglielmo et al., 2013).



Figure 2. Panoramic view of Pantano Longarini (above) and Pantano Cuba (below), the two biggest swamp lakes of the study area (Photo: ©SPA_DE).

N.	EURING CODE	ENGLISH NAME	SCIENTIFIC NAME	AUTHOR	PHENOLOGY	IUCN
Galliformes						
Phasianidae						
1	3700	Common Quail	<i>Coturnix coturnix</i>	(Linnaeus, 1758)	M, W irr	DD
Anseriformes						
Anatidae						
2	1520	Mute swan*	<i>Cygnus olor*</i>	(J.F. Gmelin, 1789)	A	LC
3	1610	Greylag Goose	<i>Anser anser</i>	(Linnaeus, 1758)	M irr, W irr	LC
4	2210	Red-breasted Merganser*	<i>Mergus serrator*</i>	Linnaeus, 1758	M irr, W irr	
5	1730	Common Shelduck	<i>Tadorna tadorna</i>	(Linnaeus, 1758)	M, W, B	VU
6	1710	Ruddy Shelduck	<i>Tadorna ferruginea</i>	(Pallas, 1764)	M irr, W irr	
7	1950	Marbled Duck	<i>Marmaronetta angustirostris</i>	(Ménétries, 1832)	M, B, W irr	EN
8	1960	Red-crested Pochard	<i>Netta rufina</i>	(Pallas, 1773)	M irr, W irr	VU
9	1980	Common Pochard	<i>Aythya ferina</i>	(Linnaeus, 1758)	M, W, B irr	VU
10	2020	Ferruginous Duck	<i>Aythya nyroca</i>	(Güldenstädt, 1770)	M, W, SB	EN
11	2030	Tufted Duck	<i>Aythya fuligula</i>	(Linnaeus, 1758)	W	VU
12	2040	Greater Scaup	<i>Aythya marila</i>	(Linnaeus, 1761)	A	
13	1910	Garganey	<i>Spatula querquedula</i>	(Linnaeus, 1758)	M	VU
14	1940	Northern Shoveler	<i>Spatula clypeata</i>	(Linnaeus, 1758)	M, W, B irr	VU
15	1820	Gadwall	<i>Mareca strepera</i>	(Linnaeus, 1758)	M, W, B irr	NT
16	1790	Wigeon	<i>Mareca penelope</i>	(Linnaeus, 1758)	M, W	NA
17	1860	Mallard	<i>Anas platyrhynchos</i>	Linnaeus, 1758	M, W, SB	LC
18	1890	Northern Pintail	<i>Anas acuta</i>	Linnaeus, 1758	M, W	NA
19	1840	Eurasian Teal	<i>Anas crecca</i>	Linnaeus, 1758	M, W	EN
Podicipediformes						
Podicipedidae						
20	70	Little Grebe	<i>Tachybaptus ruficollis</i>	(Pallas, 1764)	M, W, SB	LC
21	90	Great Crested Grebe	<i>Podiceps cristatus</i>	(Linnaeus, 1758)	B, M, W	LC
22	110	Horned Grebe	<i>Podiceps auritus</i>	(Linnaeus, 1758)	A	
23	120	Eared Grebe	<i>Podiceps nigricollis</i>	C. L. Brehm, 1831	M, W	NA
Phoenicopteriformes						
Phoenicopteridae						
24	1472	Greater Flamingo	<i>Phoenicopterus roseus</i>	Pallas, 1811	M, W	LC
Columbiformes						
Columbidae						
25	6650	Feral Pigeon	<i>Columba livia f. domestica</i>	J. F. Gmelin, 1789	SB	
26	6700	Woodpigeon	<i>Columba palumbus</i>	Linnaeus, 1758	SB	LC
27	6870	Eurasian Turtle Dove	<i>Streptopelia turtur</i>	(Linnaeus, 1758)	M, B	LC
28	6840	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	(Frivaldszky, 1838)	SB	LC
29	6900	Laughing Dove*	<i>Spilopelia senegalensis*</i>	(Linnaeus, 1766)	A	NT
Caprimulgiformes						
Caprimulgidae						
30	7780	Nightjar	<i>Caprimulgus europaeus</i>	Linnaeus, 1758	M	LC

Apodidae						
31	7980	Alpine Swift	<i>Tachymarptis melba</i>	(Linnaeus, 1758)	M	LC
32	7960	Pallid Swift	<i>Apus pallidus</i>	(Shelley, 1870)	M	LC
33	7950	Common Swift	<i>Apus apus</i>	(Linnaeus, 1758)	M, B	LC
Cuculiformes						
Cuculidae						
34	7160	Great Spotted Cuckoo	<i>Clamator glandarius</i>	(Linnaeus, 1758)	M, B irr	EN
35	7240	Common Cuckoo	<i>Cuculus canorus</i>	Linnaeus, 1758	M	LC
Gruiformes						
Rallidae						
36	4070	Water Rail	<i>Rallus aquaticus</i>	Linnaeus, 1758	SB, M, W	LC
37	4080	Spotted Crake	<i>Porzana porzana</i>	(Linnaeus, 1766)	M	CR
38	4100	Little Crake	<i>Zapornia parva</i>	(Scopoli, 1769)	M	CR
39	4270	Purple Swamphen	<i>Porphyrio porphyrio</i>	(Linnaeus, 1758)	SB	NT
40	4240	Common Moorhen	<i>Gallinula chloropus</i>	(Linnaeus, 1758)	SB, M, W	LC
41	4290	Eurasian Coot	<i>Fulica atra</i>	Linnaeus, 1758	SB, M, W	LC
Gruidae						
42	4330	Common Crane	<i>Grus grus</i>	(Linnaeus, 1758)	M, W irr	RE
Procellariiformes						
Procellariidae						
43	0360	Scopoli's Shearwater	<i>Calonectris diomedea</i>	(Scopoli, 1769)	M	LC
44	0462	Yelkouan Shearwater	<i>Puffinus yelkouan</i>	(Acerbi, 1827)	M	VU
Ciconiiformes						
Ciconiidae						
45	1310	Black Stork	<i>Ciconia nigra</i>	(Linnaeus, 1758)	M	EN
46	1340	White Stork	<i>Ciconia ciconia</i>	(Linnaeus, 1758)	M, W irr	LC
Pelecaniformes						
Threskiornithidae						
47	1440	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Linnaeus, 1758	M, W	NT
48	1360	Glossy Ibis	<i>Plegadis falcinellus</i>	(Linnaeus, 1766)	M, W irr	VU
Ardeidae						
49	950	Bittern	<i>Botaurus stellaris</i>	(Linnaeus, 1758)	M, W	EN
50	980	Little Bittern	<i>Ixobrychus minutus</i>	(Linnaeus, 1766)	M, B, W irr	VU
51	1040	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	(Linnaeus, 1758)	M, B irr, W	LC
52	1080	Squacco Heron	<i>Ardeola ralloides</i>	(Scopoli, 1769)	M, B irr, W irr	NT
53	1110	Cattle Egret	<i>Bubulcus ibis</i>	(Linnaeus, 1758)	M, W irr	LC
54	1220	Grey Heron	<i>Ardea cinerea</i>	Linnaeus, 1758	M, W	LC
55	1240	Purple Heron	<i>Ardea purpurea</i>	Linnaeus, 1766	M, B irr	LC
56	1210	Great Egret	<i>Ardea alba</i>	Linnaeus, 1758	M, W	NT
57	1190	Little Egret	<i>Egretta garzetta</i>	(Linnaeus, 1766)	M, B irr, W	LC
58	1180	Western Reef Heron	<i>Egretta gularis</i>	(Bosc, 1792)	M irr	
Pelecanidae						
59	880	Great White Pelican	<i>Pelecanus onocrotalus</i>	Linnaeus, 1758	A	
Suliformes						
Sulidae						

60	710	Northern Gannet	<i>Morus bassanus</i>	(Linnaeus, 1758)	M, W irr	NA
Phalacrocoracidae						
61	720	Great Cormorant	<i>Phalacrocorax carbo</i>	(Linnaeus, 1758)	M, W	LC
Charadriiformes						
Burhinidae						
62	4590	Stone-curlew	<i>Burhinus oediconemus</i>	(Linnaeus, 1758)	SB, M, W	LC
Haematopodidae						
63	4500	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Linnaeus, 1758	M	VU
Recurvirostridae						
64	4560	Pied Avocet	<i>Recurvirostra avosetta</i>	Linnaeus, 1758	M, B irr, W irr	LC
65	4550	Black-winged Stilt	<i>Himantopus himantopus</i>	(Linnaeus, 1758)	M, B, W irr	LC
Charadriidae						
66	4860	Grey Plover	<i>Pluvialis squatarola</i>	(Linnaeus, 1758)	M, W	
67	4850	European Golden Plover	<i>Pluvialis apricaria</i>	(Linnaeus, 1758)	M, W	
68	4820	Eurasian Dotterel	<i>Eudromias morinellus</i>	(Linnaeus, 1758)	A	NA
69	4700	Common Ringed Plover	<i>Charadrius hiaticula</i>	Linnaeus, 1758	M, W irr	
70	4690	Little Ringed Plover	<i>Charadrius dubius</i>	Scopoli, 1786	M, B irr, W irr	NT
71	4770	Kentish Plover	<i>Charadrius alexandrinus</i>	Linnaeus, 1758	M, B, W	EN
72	4930	Northern Lapwing	<i>Vanellus vanellus</i>	(Linnaeus, 1758)	M, W	LC
73	4920	White-tailed Lapwing*	<i>Vanellus leucurus*</i>	(Lichtenstein, 1823)	A	
Scolopacidae						
74	5380	Whimbrel	<i>Numenius phaeopus</i>	(Linnaeus, 1758)	M irr	
75	5410	Eurasian Curlew	<i>Numenius arquata</i>	(Linnaeus, 1758)	M, W	NA
76	5340	Bar-tailed Godwit	<i>Limosa lapponica</i>	(Linnaeus, 1758)	M	
77	5320	Black-tailed Godwit	<i>Limosa limosa</i>	(Linnaeus, 1758)	M	EN
78	5610	Ruddy Turnstone	<i>Arenaria interpres</i>	(Linnaeus, 1758)	M, W irr	
79	4960	Red Knot	<i>Calidris canutus</i>	(Linnaeus, 1758)	M	
80	5170	Ruff	<i>Calidris pugnax</i>	(Linnaeus, 1758)	M, W irr	
81	5140	Broad-billed Sandpiper	<i>Calidris falcinellus</i>	(Pontoppidan, 1763)	M irr	
82	5090	Curlew Sandpiper	<i>Calidris ferruginea</i>	(Pontoppidan, 1763)	M	
83	5020	Temminck's Stint	<i>Calidris temminckii</i>	(Leisler, 1812)	M, W irr	
84	5000	Red-necked Stint*	<i>Calidris ruficollis*</i>	(Pallas, 1776)	A	
85	4970	Sanderling	<i>Calidris alba</i>	(Pallas, 1764)	M, W	
86	5120	Dunlin	<i>Calidris alpina</i>	(Linnaeus, 1758)	M, W	
87	5010	Little Stint	<i>Calidris minuta</i>	(Leisler, 1812)	M, W irr	
88	5160	Buff-breasted Sandpiper*	<i>Calidris subruficollis*</i>	(Vieillot, 1819)	A	
89	5070	Pectoral Sandpiper*	<i>Calidris melanotos*</i>	(Vieillot, 1819)	A	
90	5290	Eurasian Woodcock	<i>Scolopax rusticola</i>	Linnaeus, 1758	M, W irr	DD
91	5200	Great Snipe	<i>Gallinago media</i>	(Latham, 1787)	M irr	
92	5190	Common Snipe	<i>Gallinago gallinago</i>	(Linnaeus, 1758)	M, W	NA
93	5180	Jack Snipe	<i>Lymnocyptes minimus</i>	(Brünnich, 1764)	M, W irr	
94	5640	Red-necked Phalarope*	<i>Phalaropus lobatus*</i>	(Linnaeus, 1758)	M irr	
95	5550	Terek Sandpiper	<i>Xenus cinereus</i>	(Güldenstädt, 1775)	M irr	
96	5560	Common Sandpiper	<i>Actitis hypoleucos</i>	(Linnaeus, 1758)	M, W	NT
97	5530	Green Sandpiper	<i>Tringa ochropus</i>	Linnaeus, 1758	M, W irr	

98	5450	Spotted Redshank	<i>Tringa erythropus</i>	(Pallas, 1764)	M, W irr	
99	5480	Common Greenshank	<i>Tringa nebularia</i>	(Gunnerus, 1767)	M, W irr	
100	5460	Common Redshank	<i>Tringa totanus</i>	(Linnaeus, 1758)	M, W	LC
101	5540	Wood Sandpiper	<i>Tringa glareola</i>	Linnaeus, 1758	M, W irr	
102	5470	Marsh Sandpiper	<i>Tringa stagnatilis</i>	(Bechstein, 1803)	M	
103	4650	Collared Pratincole	<i>Glareola pratincola</i>	(Linnaeus, 1766)	M	EN
Laridae						
104	5780	Little Gull	<i>Hydrocoloeus minutus</i>	(Pallas, 1776)	M, W	
105	5850	Slender-billed Gull	<i>Larus genei</i>	(Brème, 1839)	M, W	NT
106	5820	Black-headed Gull	<i>Larus ridibundus</i>	(Linnaeus, 1766)	M, W	LC
107	5750	Mediterranean Gull	<i>Larus melanocephalus</i>	(Temminck, 1820)	M, W	NT
108	5880	Audouin's Gull	<i>Larus audouinii</i>	Payraudeau, 1826	M, W	LC
109	5910	Lesser Black-backed Gull	<i>Larus fuscus</i>	Linnaeus, 1758	M, W	
110	5926	Yellow-legged Gull	<i>Larus michahellis</i>	Naumann, 1840	SB, M, W	LC
111	5927	Caspian Gull	<i>Larus cachinnans</i>	Pallas, 1811	M irr, W irr	
112	6240	Little Tern	<i>Sternula albifrons</i>	(Pallas, 1764)	M, B	NT
113	6050	Gull-billed Tern	<i>Gelochelidon nilotica</i>	(J. F. Gmelin, 1789)	M	NT
114	6060	Caspian Tern	<i>Hydroprogne caspia</i>	(Pallas, 1770)	M	NA
115	6260	Whiskered Tern	<i>Chlidonias hybrida</i>	(Pallas, 1811)	M	VU
116	6280	White-winged Tern	<i>Chlidonias leucopterus</i>	(Temminck, 1815)	M	NA
117	6270	Black Tern	<i>Chlidonias niger</i>	(Linnaeus, 1758)	M	CR
118	6150	Common Tern	<i>Sterna hirundo</i>	Linnaeus, 1758	M irr	LC
119	6090	Lesser Crested Tern*	<i>Thalasseus bengalensis*</i>	(Lesson, 1831)	A	NA
120	6110	Sandwich Tern	<i>Thalasseus sandvicensis</i>	(Latham, 1787)	M, W	VU
Stercorariidae						
121	5670	Arctic Jaeger	<i>Stercorarius parasiticus</i>	(Linnaeus, 1758)	W irr	
122	5660	Pomarine Jaeger	<i>Stercorarius pomarinus</i>	(Temminck, 1815)	W irr	
123	5690	Great Skua	<i>Catharacta skua</i>	(Brünnich, 1764)	W irr	
Strigiformes						
Tytonidae						
124	7350	Barn Owl	<i>Tyto alba</i>	(Scopoli, 1769)	SB, M, W	
Strigidae						
125	7570	Little Owl	<i>Athene noctua</i>	(Scopoli, 1769)	SB	
126	7390	Eurasian Scops Owl	<i>Otus scops</i>	(Linnaeus, 1758)	M, B	LC
127	7670	Northern Long-eared Owl	<i>Asio otus</i>	(Linnaeus, 1758)	M, W irr	LC
128	7680	Short-eared Owl	<i>Asio flammeus</i>	(Pontoppidan, 1763)	M, W irr	NA
129	7610	Tawny Owl	<i>Strix aluco</i>	Linnaeus, 1758	SB	LC
Accipitriformes						
Pandionidae						
130	3010	Osprey	<i>Pandion haliaetus</i>	(Linnaeus, 1758)	M, W	CR
Accipitridae						
131	2310	Honey Buzzard	<i>Pernis apivorus</i>	(Linnaeus, 1758)	M	LC
132	2470	Egyptian vulture	<i>Neophron percnopterus</i>	(Linnaeus, 1758)	M irr	CR
133	2560	Short-toed Eagle	<i>Circaetus gallicus</i>	(J.F. Gmelin, 1788)	M, W irr	LC
134	2920	Lesser Spotted Eagle	<i>Clanga pomarina</i>	(C.L. Brehm, 1831)	M, W irr	

135	2990	Bonelli's Eagle	<i>Aquila fasciata</i>	Vieillot, 1823	W irr	EN
136	2980	Booted Eagle	<i>Hieraaetus pennatus</i>	(J.F. Gmelin, 1788)	M, W	NA
137	2600	Western Marsh Harrier	<i>Circus aeruginosus</i>	(Linnaeus, 1758)	M, W	VU
138	2610	Hen Harrier	<i>Circus cyaneus</i>	(Linnaeus, 1766)	M, W	NA
139	2620	Pallid Harrier	<i>Circus macrourus</i>	(S.G. Gmelin, 1770)	M, W irr	
140	2630	Montagu's Harrier	<i>Circus pygargus</i>	(Linnaeus, 1758)	M	VU
141	2690	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	(Linnaeus, 1758)	M, W	LC
142	2380	Black Kite	<i>Milvus migrans</i>	(Boddaert, 1783)	M	LC
143	2870	Common Buzzard	<i>Buteo buteo</i>	(Linnaeus, 1758)	SB, M, W	LC
144	2880	Long-legged Buzzard	<i>Buteo rufinus</i>	(Cretzschmar, 1829)	M	
Bucerotiformes						
Upupidae						
145	8460	Hoopoe	<i>Upupa epops</i>	Linnaeus, 1758	B, M, W	LC
Coraciiformes						
Meropidae						
146	8390	European Bee-eater	<i>Merops apiaster</i>	Pallas, 1773	M, B	LC
Coraciidae						
147	8410	European Roller	<i>Coracias garrulus</i>	Linnaeus, 1758	M, B irr	LC
Alcedinidae						
148	8310	Common Kingfisher	<i>Alcedo atthis</i>	(Linnaeus, 1758)	M, W	LC
Piciformes						
Picidae						
149	8480	Eurasian Wryneck	<i>Jynx torquilla</i>	Linnaeus, 1758	M, W irr	EN
Falconiformes						
Falconidae						
150	3030	Lesser Kestrel	<i>Falco naumanni</i>	Fleischer, 1818	M	LC
151	3040	Eurasian Kestrel	<i>Falco tinnunculus</i>	Linnaeus, 1758	SB, M, W	LC
152	3070	Red-footed Falcon	<i>Falco vespertinus</i>	Linnaeus, 1766	M	VU
153	3110	Eleonora's Falcon	<i>Falco eleonorae</i>	Gené, 1839	M irr	VU
154	3090	Merlin	<i>Falco columbarius</i>	Linnaeus, 1758	M, W	
155	3100	Eurasian Hobby	<i>Falco subbuteo</i>	Linnaeus, 1758	M	LC
156	3140	Lanner	<i>Falco biarmicus</i>	Temminck, 1825	A	EN
157	3160	Saker Falcon	<i>Falco cherrug</i>	J. E. Gray, 1834	A	
158	3200	Peregrine	<i>Falco peregrinus</i>	Tunstall, 1771	M, W	LC
Passeriformes						
Oriolidae						
159	15080	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	(Linnaeus, 1758)	M	LC
Laniidae						
160	15150	Red-backed Shrike	<i>Lanius collurio</i>	Linnaeus, 1758	M	VU
161	15200	Desert Grey Shrike	<i>Lanius excubitor algeriensis</i>	Lesson, 1839	A	
162	15230	Woodchat Shrike	<i>Lanius senator</i>	Linnaeus, 1758	M, B	EN
Corvidae						
163	15390	Eurasian Jay	<i>Garrulus glandarius</i>	(Linnaeus, 1758)	SB	LC
164	15490	Eurasian Magpie	<i>Pica pica</i>	(Linnaeus, 1758)	SB	LC
165	15600	Eurasian Jackdaw	<i>Corvus monedula</i>	Linnaeus, 1758	W irr	LC

166	15720	Raven	<i>Corvus corax</i>	Linnaeus, 1758	W irr	LC
167	15673	Hooded Crow	<i>Corvus corone</i>	Linnaeus, 1758	SB	LC
Paridae						
168	14620	Blue Tit	<i>Cyanistes caeruleus</i>	(Linnaeus, 1758)	SB	LC
169	14640	Great Tit	<i>Parus major</i>	Linnaeus, 1758	SB	LC
Remizidae						
170	14900	Penduline-Tit	<i>Remiz pendulinus</i>	(Linnaeus, 1758)	SB, M, W	VU
Panuridae						
171	13640	Bearded Reedling*	<i>Panurus biarmicus*</i>	(Linnaeus, 1758)	A	EN
Alaudidae						
172	9700	Lesser Short-toed Lark*	<i>Alauda rufescens*</i>	(Vieillot, 1819)	A	
173	9610	Calandra Lark	<i>Melanocorypha calandra</i>	(Linnaeus, 1766)	A	VU
174	9680	Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	(Leisler, 1814)	M	NT
175	9760	Skylark	<i>Alauda arvensis</i>	Linnaeus, 1758	M, W	NT
176	9720	Crested Lark	<i>Galerida cristata</i>	(Linnaeus, 1758)	SB	LC
Cisticolidae						
177	12260	Fan-tailed Warbler	<i>Cisticola juncidis</i>	(Rafinesque, 1810)	SB	LC
Acrocephalidae						
178	12600	Melodious Warbler	<i>Hippolais polyglotta</i>	(Vieillot, 1817)	M irr	LC
179	12590	Icterine Warbler	<i>Hippolais icterina</i>	(Vieillot, 1817)	M	
180	12410	Moustached Warbler	<i>Acrocephalus melanopogon</i>	(Temminck, 1823)	M, W irr	EN
181	12430	Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	(Linnaeus, 1758)	M	CR
182	12510	Reed Warbler	<i>Acrocephalus scirpaceus</i>	(Hermann, 1804)	M, B, W irr	LC
183	12530	Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	(Linnaeus, 1758)	M, B	NT
Locustellidae						
184	12380	Savi's Warbler	<i>Locustella luscinioides*</i>	(Savi, 1824)	A	EN
Hirundinidae						
185	10010	Common House Martin	<i>Delichon urbicum</i>	(Linnaeus, 1758)	M, B	NT
186	9950	Red-rumped Swallow	<i>Cecropis daurica</i>	Laxmann, 1769	M, B irr	VU
187	9920	Barn Swallow	<i>Hirundo rustica</i>	Linnaeus, 1758	M, B, W irr	NT
188	9910	Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i>	Scopoli, 1769	M	LC
189	9810	Sand Martin	<i>Riparia riparia</i>	(Linnaeus, 1758)	M, W irr	VU
Phylloscopidae						
190	13080	Wood Warbler	<i>Phylloscopus sibilatrix</i>	(Bechstein, 1793)	M	LC
191	13120	Willow Warbler	<i>Phylloscopus trochilus</i>	(Linnaeus, 1758)	M	
192	13110	Common Chiffchaff	<i>Phylloscopus collybita</i>	(Vieillot, 1817)	M, W	LC
Scotocercidae						
193	12200	Cetti's Warbler	<i>Cettia cetti</i>	(Temminck, 1820)	SB	LC
Sylviidae						
194	12770	Blackcap	<i>Sylvia atricapilla</i>	(Linnaeus, 1758)	SB, M, W	LC
195	12760	Garden Warbler	<i>Sylvia borin</i>	(Boddaert, 1783)	M	VU
196	12700	Desert Warbler	<i>Sylvia deserti</i>	(Loche, 1858)	A	
197	12740	Lesser Whitethroat *	<i>Sylvia curruca*</i>	(Linnaeus, 1758)	A	LC
198	12670	Sardinian Warbler	<i>Sylvia melanocephala</i>	(J. F. Gmelin, 1789)	SB	LC
199	12650	Subalpine Warbler	<i>Sylvia cantillans</i>	(Pallas, 1764)	M, B	LC
200	12750	Common Whitethroat	<i>Sylvia communis</i>	Latham, 1787	M	LC
201	12640	Spectacled Warbler	<i>Sylvia conspicillata</i>	Temminck, 1820	M	LC
Troglodytidae						
202	10660	Northern Wren	<i>Troglodytes troglodytes</i>	(Linnaeus, 1758)	SB	LC

Sturnidae						
203	15820	Starling	<i>Sturnus vulgaris</i>	Linnaeus, 1758	M, W	
204	15830	Spotless Starling	<i>Sturnus unicolor</i>	Temminck, 1820	SB	
205	15840	Rosy Starling	<i>Pastor roseus</i>	(Linnaeus, 1758)	A	
Turdidae						
206	12000	Song Thrush	<i>Turdus philomelos</i>	C. L. Brehm, 1831	M, W	
207	11870	Blackbird	<i>Turdus merula</i>	Linnaeus, 1758	SB, M, W	
Muscicapidae						
208	13350	Spotted Flycatcher	<i>Muscicapa striata</i>	(Pallas, 1764)	M, B irr	LC
209	10990	European Robin	<i>Erithacus rubecula</i>	(Linnaeus, 1758)	M, W	LC
210	11060	Bluethroat	<i>Cyanecula svecica</i>	(Linnaeus, 1758)	M, W	NA
211	11040	Common Nightingale	<i>Luscinia megarhynchos</i>	C. L. Brehm, 1831	M, B irr	LC
212	13490	European Pied Flycatcher	<i>Ficedula hypoleuca</i>	(Pallas, 1764)	M	NA
213	13480	Collared Flycatcher	<i>Ficedula albicollis</i>	(Temminck, 1815)	M	LC
214	11210	Black Redstart	<i>Phoenicurus ochruros</i>	(S. G. Gmelin, 1774)	M, W	LC
215	11220	Redstart	<i>Phoenicurus phoenicurus</i>	(Linnaeus, 1758)	M	LC
216	11660	Blue rock thrush	<i>Monticola solitarius</i>	(Linnaeus, 1758)	SB	LC
217	11370	Whinchat	<i>Saxicola rubetra</i>	(Linnaeus, 1758)	M	VU
218	11390	European Stonechat	<i>Saxicola torquatus</i>	(Linnaeus, 1766)	M, W	EN
219	11460	Northern Wheatear	<i>Oenanthe oenanthe</i>	(Linnaeus, 1758)	M	LC
220	11440	Isabelline Wheatear	<i>Oenanthe isabellina</i>	(Temminck, 1829)	M	
221	11500	Desert Wheatear*	<i>Oenanthe deserti*</i>	(Temminck, 1825)	A	
222	11480	Black-eared Wheatear	<i>Oenanthe hispanica</i>	(Linnaeus, 1758)	M	DD
Prunellidae						
223	10840	Dunnock	<i>Prunella modularis</i>	(Linnaeus, 1758)	W	NT
Passeridae						
224	15912	Italian Sparrow	<i>Passer italiae</i>	(Vieillot, 1817)	SB	NT
225	15980	Eurasian Tree Sparrow	<i>Passer montanus</i>	(Linnaeus, 1758)	SB	LC
Motacillidae						
226	10090	Tree Pipit	<i>Anthus trivialis</i>	(Linnaeus, 1758)	M	LC
227	10120	Red-throated Pipit	<i>Anthus cervinus</i>	(Pallas, 1811)	M, W	
228	10110	Meadow Pipit	<i>Anthus pratensis</i>	(Linnaeus, 1758)	M, W	NA
229	10140	Water Pipit	<i>Anthus spinoletta</i>	(Linnaeus, 1758)	M, W irr	LC
230	10020	Richard's Pipit	<i>Anthus richardi</i>	Vieillot, 1818	M, W	
231	10050	Tawny Pipit	<i>Anthus campestris</i>	(Linnaeus, 1758)	M	VU
232	10170	Yellow Wagtail	<i>Motacilla flava</i>	Linnaeus, 1758	M, B irr, W irr	LC
233	10190	Grey Wagtail	<i>Motacilla cinerea</i>	Tunstall, 1771	M, W	LC
234	10180	Citrine Wagtail	<i>Motacilla citreola</i>	Pallas, 1776	A	
235	10200	White Wagtail	<i>Motacilla alba</i>	Linnaeus, 1758	SB, M irr, W	LC
Fringillidae						
236	16360	Common Chaffinch	<i>Fringilla coelebs</i>	Linnaeus, 1758	W	LC
237	16490	European Greenfinch	<i>Chloris chloris</i>	(Linnaeus, 1758)	SB, M, W irr	NT
238	16600	Linnet	<i>Linaria cannabina</i>	(Linnaeus, 1758)	SB, M, W	LC
239	16530	European Goldfinch	<i>Carduelis carduelis</i>	(Linnaeus, 1758)	SB, M, W	LC
240	16400	European Serin	<i>Serinus serinus</i>	(Linnaeus, 1766)	SB, M, W	LC

241	16540	Eurasian Siskin	<i>Spinus spinus</i>	(Linnaeus, 1758)	M, W irr	LC
Fringillidae						
242	18820	Corn Bunting	<i>Emberiza calandra</i>	Linnaeus, 1758	SB, M, W	LC
243	18580	Cirl Bunting	<i>Emberiza cirlus</i>	Linnaeus, 1766	SB	LC
244	18770	Reed Bunting	<i>Emberiza schoeniclus</i>	(Linnaeus, 1758)	M, W	CR

Table 1. Bird checklist of Sicilian southeast swamp lakes. Species marked with * were observed before the survey period 2015-2021.

Classis AVES

Ordo ANSERIFORMES

Familia ANATIDAE

Cygnus olor (J.F. Gmelin, 1789) - Mute Swan

STATUS IN SICILY. Rare migratory and irregular wintering (Massa et al., 2021).

DATA COLLECTED. 28 ind. between December 1992 and January 1993 (Corso, 2005) and 8 ind. on 7.II.1993 in Pantano Longarini; about 120 ind. in Salina Morghella from December 1993 to January 1994 and 40 ind. again in Pantano Longarini from December 1994 to January 1995 (Corso, 2005).

REASONS OF INTEREST. Low numbers/records for Sicily.

Anser anser (Linnaeus, 1758) - Greylag Goose

STATUS IN SICILY. Rare migratory and irregular wintering (Massa et al., 2021).

DATA COLLECTED. 4 ind. together observed from 4.XII.2016 to 16.XII.2016 in Pantano Longarini; 1 on 10.III.2017 in Pantano Longarini; 1 on 19.XII.2017 in Salina Morghella; 1 from 4.XII.2020 to 21.XII.2020 in Pantano Cuba.

REASONS OF INTEREST. Low numbers/records for Sicily; lack of recent published data.

Tadorna ferruginea (Pallas, 1764) - Ruddy Shelduck

STATUS IN SICILY: migratory, irregular wintering and dubious breeding (Massa et al., 2021).

DATA COLLECTED. 5 ind. together in Pantano Baronello on 9.XII.2011 and 1 in Pantano Ponterio on 14.III.2012 (Ientile, pers. comm.); 1 on 23.XI.2014 in Pantano Longarini (Scuderi, pers.

comm.); 1 on 25.XI.2016 in Pantano Cuba and 1 from 10.XI.2017 to 30.XI.2017 in Pantano Longarini; 1 on 16.XII.2019 in Pantano Garifi - Ispica, Ragusa (36°44'7.86"N; 14°55'56.00"E).

REASONS OF INTEREST. Low numbers/records for Sicily; the study area represents an important wintering and migratory site for the species.

Marmaronetta angustirostris (Ménétries, 1832) - Marbled Duck

STATUS IN SICILY. Migratory and rare breeding (Massa et al., 2021).

DATA COLLECTED. Regularly breeding in the study area from 2006 (Andreotti, 2007); 3–5 pairs in 2015–2020 for the whole area, mostly recorded in Pantano Bruno, Pantano Cuba, Pantano Longarini. 2–4 ind. observed from April to June 2016 in Pantano Longarini, with at least 1 pair; 2–6 ind. together (2 juvs) observed from June to August 2017 in Pantano Cuba and 7 ind. on 16.IX.2017 in Pantano Bruno; 2–5 ind. (2 juvs) observed from May to August 2018 in Pantano Cuba; ≥ 7 ind. (6 juvs) on 9.VIII.2018 (Cusmano, pers. comm.) in Pantano Auruca; 6 ind. in Pantano Baronello on 17.III.2019; 5–7 ind. (4 juvs) in Pantano Bruno observed from 23 up to 30.VIII.2019; 7–9 (4 juvs) observed from 10.VII.2020 to 6.IX.2020 in Pantano Cuba (Fig. 3).

Wintering: 8 ind. on 30.XI.2017 in Pantano Bruno; 6 ind. on 15.XII.2017 and 2 on 19.I.2018 in Pantano Cuba; 1 on 1.I.2020 in Pantano Longarini.

REASONS OF INTEREST. The study area represents the most important breeding site for the species in Sicily and Italy; lack of recent published data.

Netta rufina (Pallas, 1773) - Red-crested Pochard

STATUS IN SICILY. Rare migratory and irregular wintering, extinct breeder (Massa et al., 2021).

DATA COLLECTED. 1 adult male on 8.I.2018 (Assandri & Bazzi, pers. comm.) and on 21.I.2018 in Salina Morghella; 1 adult female on 14.II.2019 in Pantano Cuba; 1 pair observed from late March to late April 2021 both in Pantano Cuba and Pantano Longarini showing courtship displays (Gariboldi & Ambrogio, 2006).

REASONS OF INTEREST. Low numbers/records for Sicily.

Aythya nyroca (Güldenstädt, 1770) - Ferruginous Duck

STATUS IN SICILY. Migratory, scarce wintering and rare resident breeder (Massa et al., 2021).

DATA COLLECTED. Regularly breeding and wintering in the study area with an estimation of 11–24 pairs for the period 2015–2020, depending on annual water levels: 2–3 pairs for Pantano Bruno; 4–8 pairs in Pantano Longarini; 3–5 pairs for Pantano Cuba, 0–2 for Pantano Auruca, 2–4 for Pantano Baronello and Ciaramiraro, 0–1 both for Pantano Ponterio and Morghella. No pairs recorded for Pantano Marzamemi (Ientile, pers. comm.). Interesting records: 32 ind. in Pantano Cuba and 28 ind. in Pantano Longarini on 19.V.2016; ≥ 60 ind. in Pantano Cuba on 24.VI.2016; 40 ind. on 1.VI.2017 in Pantano Cuba; 37 ind. on 15.VI.2018 in Pantano Bruno.

Wintering: a total of 142 ind. observed in Pantano Bruno, Cuba and Longarini on 8.I.2011; groups of 20–50 ind. regularly observed in December and January 2015–2017 and lower groups of 20–30 ind. in December and January 2018–2020 in Pantano Cuba and Pantano Bruno, which represent the most important swamp lakes for the species.

REASONS OF INTEREST. The study area represents an important breeding and wintering site for the species; lack of recent published data.

Aythya marila (Linnaeus, 1761) - Greater Scaup

STATUS IN SICILY. Migratory and occasional wintering (Massa et al., 2021).

DATA COLLECTED. 1 adult female observed on 20.XI.2016 and again together to 1 juv. on 25.XI.2016 and on 26.I.2017 in Pantano Longarini.

REASONS OF INTEREST. low numbers/records for Sicily; lack of recent published data.

Ordo PODICIPEDIFORMES

Familia PODICIPEDIDAE

Podiceps auritus (Linnaeus, 1758) - Horned Grebe

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED. 2 ind. observed in the harbour of Portopalo di Capo Passero on 3.I.2020 (Nicoli, Sozzi, Nova & La Grua, pers. comm.) and 24.II.2020.

REASONS OF INTEREST. Low numbers/records for Sicily.

Ordo COLUMBIFORMES

Familia COLUMBIDAE

Spilopelia senegalensis (Linnaeus, 1766) - Laughing Dove

STATUS IN SICILY. Very rare breeding; common resident breeding in Pantelleria (Massa et al., 2021).

DATA COLLECTED. 1 ind. on 13.IV.2014 near to Isola delle Correnti, in Portopalo di Capo Passero (Ientile, pers. comm.).

REASONS OF INTEREST. Low numbers/records for Sicily.

Ordo GRUIFORMES

Familia RALLIDAE

Porzana porzana (Linnaeus, 1766) - Spotted Crake

STATUS IN SICILY. Scarce migratory and occasional wintering (Massa et al., 2021).

DATA COLLECTED. 1 female on 7.IV.2017 in Pantano Cuba; 2 adult females found dead, 1 on 9.X.2019 and 1 on 5.XI.2020, in Pantano Cuba.

REASONS OF INTEREST. Low numbers/records for Sicily; lack of recent published data.

Porphyrio porphyrio (Linnaeus, 1758) - Purple Swamphen



Figure 3. Group of 8 Marbled ducks in Pantano Cuba (photo by C. Cappuzzello).



Figure 4. Little Egret's heronry with nests and chicks in Pantano Longarini (photo by F. La Spina).

STATUS IN SICILY. Reintroduced resident breeder (Ientile & Andreotti, 2003; Massa et al., 2021).

DATA COLLECTED. Regularly breeding in the study area with 16–34 pairs in 2015–2020, depending on annual water levels: 3–5 pairs for Pantano Bruno; 5–8 pairs in Pantano Longarini; 5–9 pairs for Pantano Cuba, 1–3 for Pantano Auruca, 2–6 for Pantano Baronello and Ciaramiraro, 0–1 for Pantano Ponterio; 0–2 for Salina Morghella as well as for Pantano Marzamemi.

REASONS OF INTEREST. The study area represents an important breeding site for the species; lack of recent published data.

Familia THRESKIORNITHIDAE

Plegadis falcinellus (Linnaeus, 1766) - Glossy Ibis

STATUS IN SICILY. Scarce migratory, irregular wintering and occasional breeding (Massa et al., 2021).

DATA COLLECTED. Regular migratory species in the area, usually with groups of 10–30 ind.; 118 ind. observed in migration in Pantano Cuba on 26.III.2016; 1 on 16.XII.2017 in Pantano Longarini; 90 ind. on 26.IV.2019 in Pantano Cuba.

REASONS OF INTEREST: unusual number recorded; low wintering records for Sicily.

Familia ARDEIDAE

Botaurus stellaris (Linnaeus, 1758) - Eurasian Bittern

STATUS IN SICILY. Scarce migratory and irregular wintering (Massa et al., 2021).

DATA COLLECTED. Regularly migratory and wintering in the area with 2–4 ind. per winter, mainly in Pantano Longarini, which represents a very important wintering site for the species in the southeast of Sicily. 1 in December 2015/January 2016 in Pantano Cuba; 2 ind. in December 2016/January 2017 in Pantano Longarini; 1 in Pantano Longarini and 1 in Pantano Bruno in January 2018; 1 in Pantano Longarini in December 2018/January 2019; 1 in February 2020 and 2–3 ind. in December 2020 and January 2021, all of them in Pantano Longarini. Unusually, 1 observed in Pantano Longarini on 12.VI.2020.

REASONS OF INTEREST. The study area represents an important wintering site for the species.

Egretta garzetta (Linnaeus, 1766) - Little Egret

STATUS IN SICILY. Migratory, common wintering and scarce breeder (Massa et al., 2021).

DATA COLLECTED. Irregular breeder in the area with variables pairs; no less than 30 pairs with nests and chicks counted on 28.VI.2019 (Cusmano & La Spina, pers. comm., Fig.4), nesting on *Eucalyptus camaldulensis* in Pantano Longarini, which represents the most important breeding site of the study area.

REASONS OF INTEREST: the study area represents an important breeding site for the species.

Egretta gularis (Bosc, 1792) - Western Reef-egret

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED. 1 adult regularly observed in June 2016 and from April up to August 2017–19 in Gorgo Salato, Pantano Bruno, Pantano Longarini and Pantano Cuba; it was probably a hybrid of *Egretta garzetta* x *Egretta gularis schistacea*, due to the extended white on primaries, secondaries, primary coverts and tertials (Fig. 5).

REASONS OF INTEREST. Low number/records for Sicily.

Ordo PELECANIFORMES
 Familia PELECANIDAE

Pelecanus onocrotalus Linnaeus, 1758 - Great White Pelican

STATUS IN SICILY. Irregular migratory (Massa et al., 2021).

DATA COLLECTED. 1 in Pantano Cuba on 27.VIII.2015 (Fig. 6).

REASONS OF INTEREST. Low numbers/records for Sicily; lack of recent published data.

Ordo CHARADRIIFORMES

Vanellus leucurus (Lichtenstein, 1823) - White-tailed Lapwing

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED. 1 individual captured in Pantano Longarini on 19.IV.1975 (Iapichino & Massa, 1989) and now preserved in the Zoology Museum of Catania University (Corso, 2005).

REASONS OF INTEREST. Only 2 records for Sicily.

Familia SCOLOPACIDAE

Limosa lapponica (Linnaeus, 1758) - Bar-tailed Godwit

STATUS IN SICILY. Scarce migratory and irregular

wintering (Massa et al., 2021) with most of the records in Saline di Trapani (Surdo, 2016a; 2018).

DATA COLLECTED. 4 ind. on 24.IX.2015 in Pantano Cuba; 1 on 29.III.2019 and 1 on 5.IV.2019 in Pantano Longarini; 1 juv. observed from 12 up to 25.IX.2020 in Pantano Longarini.

REASONS OF INTEREST. Low numbers/records for Sicily; the study area represents an important migratory site for the species.

Calidris canutus (Linnaeus, 1758) - Red Knot

STATUS IN SICILY. Rare migratory and irregular wintering (Massa et al., 2021).

DATA COLLECTED. Regularly observed in migration, usually with 1–2 ind.: 2–3 observed in late October 2016 in Pantano Cuba; 17 ind. on 29.VII.2017 in Pantano Bruno; 5 ind. on 20.VII.2018 in Pantano Longarini; 3 ind. on 12.IX.2020 in Pantano Longarini.

REASONS OF INTEREST. Low numbers/records for Sicily; the study area represents an important migratory site for the species.

Calidris falcinellus (Pontoppidan, 1763) - Broad-billed Sandpiper

STATUS IN SICILY. Irregular migratory (Massa et al., 2021).

DATA COLLECTED. 1 ind. in Pantano Cuba on 4.VIII.2016 and 1 in Pantano Longarini on 12.IX.2020 and 20.IX.2020.

REASONS OF INTEREST. Low numbers/records for Sicily.

Calidris ruficollis (Pallas, 1776) - Red-necked Stint

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED: 1 adult in Pantano Longarini on 29.VII.2012. Observation approved by COI (Commissione Ornitologica Italiana) (Fracasso et al., 2018).

REASONS OF INTEREST. Low numbers/records for Sicily.



Figure 5. *Egretta gularis* in Pantano Longarini in May 2018 (photo by P. Galasso).



Figure 6. *Pelecanus onocrotalus* photographed on 27.VIII.2015 in Pantano Cuba (photo by C. Cappuzello).

Calidris subruficollis (Viellot, 1819) - Buff-breasted Sandpiper

STATUS IN SICILY. Accidental (Massa *et al.*, 2021).

DATA COLLECTED. 1 juv. captured in Pantano Longarini on 21.IX.1976 (Iapichino & Massa, 1989).

REASONS OF INTEREST. Low numbers/records for Sicily.

Calidris melanotos (Viellot, 1819) - Pectoral Sandpiper

STATUS IN SICILY. Accidental (Massa *et al.*, 2021).

DATA COLLECTED. 1 juv. in Pantano Longarini on 19.VII.1998 (Corso in Janni, 2001).

REASONS OF INTEREST. Low numbers/records for Sicily.

Phalaropus lobatus (Linnaeus, 1758) - Red-necked Phalarope

STATUS IN SICILY. Irregular migratory (Massa *et al.*, 2021).

DATA COLLECTED. 1 individual on 26.VIII.1974 and 1 on 26.VIII.1996, both of them in Pantano Longarini (Corso, 2005); 1 in Pantano Cuba on 9.IX.2006 and 1 on 6/14.IX.2007 (Ientile, pers. comm.) in Salina Morghella.

REASONS OF INTEREST. Low numbers/records for Sicily.

Xenus cinereus (Güldenstädt, 1775) - Terek Sandpiper

STATUS IN SICILY. Irregular migratory and irregular wintering (Massa *et al.*, 2021).

DATA COLLECTED. 1 ind. observed several times in Pantano Baronello on August 2008; 1 on 30.IX.2012 and 1 on August 2016, both of them in Pantano Cuba.

REASONS OF INTEREST. Low numbers/records for Sicily; the study area represents an important migratory site for the species.

Tringa glareola Linnaeus, 1758 - Wood Sandpiper

STATUS IN SICILY. Common migratory and rare wintering (Surdo *et al.*, 2018; Massa *et al.*, 2021).

DATA COLLECTED. 1 observed from 11.I.2019 up to 25.I.2019 and 3 ind. observed from 21 up to 27.XI.2020, all of them in Pantano Longarini.

REASONS OF INTEREST. Low wintering records for Sicily.

Familia LARIDAE

Larus cachinnans Pallas, 1811 - Caspian Gull

STATUS IN SICILY. Migratory and irregular wintering (Massa *et al.*, 2021).

DATA COLLECTED. 1 adult on 28.III.2020 in Pantano Longarini.

REASONS OF INTEREST. Low numbers/records for Sicily.

Gelochelidon nilotica (G.F. Gmelin, 1789) - Common Gull-billed Tern

STATUS IN SICILY. Migratory and occasional wintering (Massa et al., 2021).

DATA COLLECTED: regularly record in the area, usually with groups of 2–10 individuals and max of 30–40 ind. reported during the spring migration (Corso, 2005); 40 ind. in Pantano Longarini on 24.IV.2015; 34 ind. on 7.IV.2017 and about 50 ind. on 29.V.2020 in Pantano Cuba; no less than 150 ind. on 11.IV.2021 in Pantano Longarini.

REASONS OF INTEREST. Unusual number recorded; the study area represents an important migratory site for the species.

Thalasseus bengalensis emigratus (Neumann, 1934) - Lesser Crested Tern

STATUS IN SICILY. Vagrant (Massa et al., 2021).

DATA COLLECTED. 1 in Pantano Longarini on 26.VII.2006 (Testolino, pers. comm.).

REASONS OF INTEREST. Low numbers/records for Sicily.

Ordo STRIGIFORMES
Familia STRIGIDAE

Asio flammeus (Pontoppidan, 1763) - Short-eared Owl

STATUS IN SICILY. Scarce migratory and irregular wintering (Massa et al., 2021).

DATA COLLECTED: 1 observed in Pantano Cuba several times in December 2015 and 1 on 1.XI.2015 in Salina Morghella (Ientile, pers. comm.); 1 on 6.IV.2016 and 1 on 7.IV.2017 for the same location; 1 on 24.XI.2017 in Pantano Longarini; 1 observed several times in April 2018, both in Pantano Cuba and Longarini; 1 on 5.XI.2020 in Pantano Cuba.

REASONS OF INTEREST. The study area represents an important wintering site for the species.

Ordo ACCIPITRIFORMES
Familia ACCIPITRIDAE

Clanga pomarina (C.L. Brehm, 1831) - Lesser Spotted Eagle

STATUS IN SICILY: irregular migratory and irregular wintering (Massa et al., 2021).

DATA COLLECTED: 1 on 22.I.2011 (Scuderi, pers. comm.); 1 juv. observed several times on October 2015 in Pantano Cuba and Longarini; 1 adult in January 2016, in the same area; 2 adults observed from 14.X.2017 up to 27.X.2017 in Pantano Cuba; 2 ind. in Pantano Longarini in November 2020: 1 of them was probably a hybrid of *C. pomarina* x *C. clanga*.

REASONS OF INTEREST: the study area represents an important wintering and migratory site for the species.

Circus cyaneus (Linnaeus, 1766) - Pallid Harrier

STATUS IN SICILY. Scarce migratory and rare wintering (Massa et al., 2021).

DATA COLLECTED. 1–4 ind. regularly observed during March–April and usually 1 in September–October for 2016–2020. Wintering: 1 (2° cy) observed from 13.I.2017 up to 17.II.2017 in Pantano Longarini; 1 adult male on 26.I.2018 and 1 on 19.XII.2019 in the same location.

REASONS OF INTEREST. Low wintering records for Sicily; the study area represents an important wintering and migratory site for the species.

Ordo CORACIFORMES
Familia CORACIIDAE

Coracias garrulous Linnaeus, 1758 - European Roller

STATUS IN SICILY. Migratory and summer breeder (Massa et al., 2021).

DATA COLLECTED. 1 pair regularly breeding in a ruin in the north side of Pantano Longarini from 2007 to 2011.

REASONS OF INTEREST. Low numbers/records for Sicily; lack of recent published data.



Figure 7. *Sylvia deserti* photographed in Pantano Cuba (photo by P. Galasso).



Figure 8. Rosy Starling photographed in Pantano Cuba (photo by N. Patti).

Ordo PASSERIFORMES
 Familia LANIIDAE

Lanius excubitor algeriensis Lesson, 1839 -
 Desert Grey Shrike

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED: 1 adult observed near Pantano Cuba from 4 to 9.I.2017 (Corso, Penna & Riddington in Nicoli et al., 2018; Arena et al., 2019).

REASONS OF INTEREST. Low numbers/records for Sicily.

Familia ALAUDIDAE

Alaudala rufescens (Veillot, 1819) - Lesser Short-toed Lark

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED. 1 on 19.XII.2010 at the mouth of Pantano Longarini.

REASONS OF INTEREST. Low numbers/records for Sicily.

Melanocorypha calandra (Linnaeus, 1766) - Calandra Lark

STATUS IN SICILY. Resident breeder, rare migratory and rare wintering (Massa et al., 2021).

DATA COLLECTED: 1 observed on 15.XI.2018, in a cultivated field in Pantano Longarini.

REASONS OF INTEREST. Lack of recent published data.

Familia PANURIDAE

Panurus biarmicus (Linnaeus, 1758) - Bearded Reedling

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED. 2–3 ind. reported for Pantano Longarini on 6.II.1980 (Iapichino & Massa, 1989).

REASONS OF INTEREST. Low numbers/records for Sicily.

Familia ACROCEPHALIDAE

Acrocephalus scirpaceus (Hermann, 1804) - Reed Warbler

STATUS IN SICILY. Summer breeder and regular migratory (Massa et al., 2021).

DATA COLLECTED. 1 on 26.II.2016; 1 ind. in singing on 8.II.2019 (Viganò, pers. comm.) and 2 ind. (1 in singing) on 15.II.2020, all of them in Pantano Cuba; 1 on 22.XII.2020 in Pantano Longarini.

REASONS OF INTEREST. Low wintering records for Sicily.

Familia LOCUSTELLIDAE

Locustella luscinioides (Savi, 1824) - Savi's Warbler

STATUS IN SICILY. Irregular migratory (Massa et al., 2021).

DATA COLLECTED. A singing individual heard in Pantano Baronello on 5.V.1995 (Corso, 2005).

REASONS OF INTEREST. Low numbers/records for Sicily.

Familia SYLVIIDAE

Sylvia deserti (Loche, 1858) - African Desert Warbler

STATUS IN SICILY. Accidental (Massa et al., 2021).

DATA COLLECTED. 1 adult in Pantano Cuba on 25/26.IV.2016 (Fig. 7), hunting small insects between wild fennels *Foeniculum vulgare*. Observation approved by COI (Commissione Ornitologica Italiana) (Fracasso et al., 2018).

REASONS OF INTEREST. Low numbers/records for Sicily; first ascertained record for Sicily (with exclusion of minor islands).

Familia STURNIDAE

Pastor roseus (Linnaeus, 1758) - Rosy Starling

STATUS IN SICILY. Irregular migratory (Massa et al., 2021).

DATA COLLECTED. 1 immature on 14/25.II.2017 (Fig. 8) and 1 on 1.XII.2017 (together in a flock with about 1500 *Sturnus vulgaris*), all of them in Pantano Cuba.

REASONS OF INTEREST. Low numbers/records for Sicily; never reported before for the study area; lack of recent published data.

Familia MUSCICAPIDAE

Oenanthe deserti (Temminck, 1825) - Desert Wheatear

STATUS IN SICILY. Irregular migratory (Massa et al., 2021).

DATA COLLECTED. 1 male observed near to Pantano Ponterio on 14–16.III.2012 (Ientile, pers. comm.); 1 male on 11.XII.2016 (Ientile, pers. comm.) in Salina Morghella.

REASONS OF INTEREST. Low numbers/records for Sicily; never reported before for the study area.

Familia MOTACILLIDAE

Anthus richardi Vieillot, 1818 - Richard's Pipit

STATUS IN SICILY. Migratory and rare wintering (Massa et al., 2021).

DATA COLLECTED. Regular migratory and wintering species in the area, observed frequently every year.

Wintering: ≥ 12 on 25.XI.2016 in Pantano Longarini; ≥ 10 on 10.III.2017, 8 on 1.XII.2018 and ≥ 12 on 4.XII.2020, all of them recorded in Pantano Cuba.

REASONS OF INTEREST. The study area represents an important wintering site for the species.

Motacilla citreola citreola Pallas, 1776 - Citrine Wagtail

STATUS IN SICILY. Irregular migratory and occasional wintering (Massa et al., 2021).

DATA COLLECTED. 1 juv. on 18.VIII.2010 in Pantano Longarini (Corso & Penna in Nicoli et al., 2011) and 1 juv. on 16.VIII.2011 in Salina Morghella; 1 adult male on 23.III.2013 in Pantano Baronello; 1 juv. on 27.VIII.2014 in Pantano Cuba; 1 in Pantano Longarini on 2.XII.2020 (Cortese & Arena, pers. comm.) and again on 3.XII.2020.

REASONS OF INTEREST. Low numbers/records for Sicily; the study area represents an important migratory site for the species.

In addition to the listed 244 bird species, we also want to report:

- Bald Ibis *Geronticus eremita* (Linnaeus, 1758) - 4 ind. of Northern in Pantano Longarini on 21.XI.2017, certainly escaped from captivity.

- *Oxyura jamaicensis* (Gmelin, 1789) - 1 adult male of Ruddy Duck observed in Pantano Bruno several times in May 2021; it represents the first record of this alien species for Sicily.

DISCUSSION

The constant weekly monitoring carried out by the authors permitted to properly understand the local phenology of most of the species recorded and updating the knowledge about breeding pairs of *Marmaronetta angustirostris*, *Aythya nyroca* and *Porphyrio porphyrio* in the study area. For 74 species the breeding was ascertained, more or less regularly; 147 species are exclusively migratory and/or wintering (in some cases with dubious breeding) and 23 species are accidentals. Standing to the last Red List of Italian breeding birds (Gustin et al., 2019), on the total of 244 species here reported, 189 can be categorized following the IUCN criteria as reported in the Table 2.

On a total of 17 species recorded and considered as “Endangered”, *Marmaronetta angustirostris*, *Aythya nyroca*, *Clamator glandarius*, *Charadrius alexandrinus* and *Lanius senator* are breeding in the area, as well *Tadorna tadorna*, *Spatula clypeata*, *Aythya farina*, *Ixobrychus minutus*, *Remiz pendulinus*, *Cecropis daurica* that are instead considered as “Vulnerable”.

The local breeding population of *Marmaronetta angustirostris*, actually represented by 3–5 pairs, have been slowly increasing in the last years if compared to the last estimation reported for the area (Corso; 2005; Andreotti, 2007). Since the population of Mazara del Vallo and surroundings (Trapani) is represented by 1–3 regular breeding pairs (Sciabica, 2004; Spagnesi & Serra, 2005; Andreotti, 2007) and only 1 pair is reported for Sar-

dinian (Grussu et al., 2014; Grussu & Podda, 2017), the breeding population of Sicilian southeast swamp lakes is actually the most important and abundant of Italy. Likewise, also the population of *Aythya nyroca* results one of the most important of Sicily for its regular number of pairs recorded, together to the locations of Pantano Leone (TP) and Vecchia Ansa del Simeto (CT) (Melega, 2007).

The current breeding population of *Porphyrio porphyrio* is the consequence of a spontaneous colonisation by the species in the area, following the reintroduction project (Andreotti, 2001): considering the last regional estimation of 108–125 pairs for 2007 (Ientile, 2008), the study area, with 16–34 pairs, hosts about the 15–27% of total Sicilian pairs. The heronry of Pantano Longarini consists of no less than 30 pairs of *Egretta garzetta*, a considerable number also if compared with the other important Sicilian heronries of Lentini and Fiume Simeto, for which 15–20 pairs are reported for 2004–2005 (Fasola et al., 2007) and 2017–2020 (Rannisi, pers. comm). The highest number of pairs in Sicily is reported for Saline di Trapani with 30–50 pairs for 2013–2016 (Surdo, 2016b).

For some species, as *Glareola pratincola* and *Melanocorypha calandra*, breeding in the area is reported for the recent past years (Corso, 2005; Ientile & Massa, 2008) but it has never been ascertained during the study, probably due to the changes on land-use and sericulture (Massa & La Mantia, 2010). Only one ascertained breeding case of *Larus*

IUCN Categories	Red List of Italian Breeding birds	Species recorded in the study area	Species breeding in the study area
Extint in the Region (RE)	5	1	0
Critically Endangered (CR)	10	7	0
Endangered (EN)	22	17	5
Vulnerable (VU)	35	24	6
Near Threatened (NT)	30	20	10
Least Concern (LC)	142	100	53
Data Deficient (DD)	13	3	0
Not Applicable (NA)	21	17	0
Total	278	189	74

Table 2. IUCN categories for the 189 species recorded in the study area. The remaining 55 species are not reported in the Italian Red List since they are exclusively migratory or wintering for Italy.

genei is reported, for 7.VII.2004 in Pantano Longarini (Corso, 2005), but it has been no more recorded.

The data collected confirmed, once again, the richness and the great importance of this area for breeding, migration and wintering of many species of birds. The 244 species listed represent about the 44% of the Italian bird species, 549 in total, officially reported up to date (Fulco & Liuzzi, 2019) and the 56% of Sicilian bird species, 437 in total, reported from Massa et al. (2021).

CONCLUSIONS

Despite the widespread degradation and illegal hunting deeply rooted in the whole area, the protection strategies (e.g. habitat restoring, land recovery, anti-poaching actions, fencing, garbage removal, etc...) applied starting from 2013 in Pantano Cuba and Pantano Longarini by the German foundation Stiftung Pro Artenvielfalt, have been giving an essential and important contribution to the improvement and enrichment of the already rich and valuable local bird community.

These two swamp lakes, indeed, represent one of the most important Italian site for the breeding of *Marmaronetta angustirostris*, *Aythya nyroca* and *Porphyrio porphyrio*. They are also important site for uncommon wintering species as *Tadorna ferruginea*, *Botaurus stellaris*, *Clanga pomarina*, *Cyrus cyaneus*, *Asio flammeus*, *Upupa epops*, *Hirundo rustica* and *Anthus richardii* and migration site of many species of birds, including *Plegadis falcinellus*, *Calidris canutus* and *Buteo rufinus*.

Additional survey on the field, if carried out in the next years, will certainly highlight the positive consequences of conservation strategies applied by the Stiftung Pro Artenvielfalt on the whole wetland of Sicilian southeast swamp lakes.

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