

Supplementary materials

Anthropogenic pressure and climate change could severely hamper the avian metacommunity of the Sicilian wetlands

Alessandro FERRARINI ¹, Claudio CELADA ¹, Marco GUSTIN ¹

¹ Lipu-Birdlife Italy, Via Udine 3/a, I-43122 Parma, Italy

Table S1. List of the avian species sampled in the Sicilian wetlands.

ID	Common name	Scientific name	Birds (2009/147/EC) Directive
1	Audouin's Gull	<i>Larus audouinii</i>	1
2	Black Stork	<i>Ciconia nigra</i>	1
3	Black Tern	<i>Chlidonias niger</i>	1
4	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	1
5	Black-headed Gull	<i>Larus ridibundus</i>	0
6	Black-necked Grebe	<i>Podiceps nigricollis</i>	0
7	Black-tailed Godwit	<i>Limosa limosa</i>	0
8	Black-winged Stilt	<i>Himantopus himantopus</i>	1
9	Broad-billed Sandpiper	<i>Calidris falcinellus</i>	0
10	Caspian Tern	<i>Hydroprogne caspia</i>	1
11	Common Greenshank	<i>Tringa nebularia</i>	0
12	Common Kingfisher	<i>Alcedo atthis</i>	1
13	Common Moorhen	<i>Gallinula chloropus</i>	0
14	Common Pochard	<i>Aythya ferina</i>	0
15	Common Redshank	<i>Tringa totanus</i>	0
16	Common Ringed Plover	<i>Charadrius hiaticula</i>	0
17	Common Sandpiper	<i>Actitis hypoleucos</i>	0
18	Common Shelduck	<i>Tadorna tadorna</i>	0
19	Common Snipe	<i>Galinago gallinago</i>	0
20	Common Tern	<i>Sterna hirundo</i>	1
21	Curlew Sandpiper	<i>Calidris ferruginea</i>	0
22	Dunlin	<i>Calidris alpina</i>	0
23	Eurasian Coot	<i>Fulica atra</i>	0
24	Eurasian Curlew	<i>Numenius arquata</i>	0
25	Eurasian Spoonbill	<i>Platalea leucorodia</i>	1
26	Eurasian Stone-curlew	<i>Burhinus oedicnemus</i>	1
27	Eurasian Teal	<i>Anas crecca</i>	0
28	Eurasian Wigeon	<i>Mareca penelope</i>	0
29	European Golden Plover	<i>Pluvialis apricaria</i>	1
30	Ferruginous Duck	<i>Aythya nyroca</i>	0
31	Gadwall	<i>Mareca strepera</i>	0
32	Garganey	<i>Spatula querquedula</i>	0
33	Great Cormorant	<i>Phalacrocorax carbo</i>	0
34	Great Crested Grebe	<i>Podiceps cristatus</i>	0
35	Great Egret	<i>Ardea alba</i>	1
36	Greater Flamingo	<i>Phoenicopterus roseus</i>	1
37	Green Sandpiper	<i>Tringa ochropus</i>	0
38	Grey Heron	<i>Ardea cinerea</i>	0
39	Grey Plover	<i>Pluvialis squatarola</i>	0
40	Gull-billed Tern	<i>Gelochelidon nilotica</i>	1
41	Kentish Plover	<i>Charadrius alexandrinus</i>	1
42	Lesser Black-backed Gull	<i>Larus fuscus</i>	0
43	Little Bittern	<i>Ixobrychus minutus</i>	1
44	Little Egret	<i>Egretta garzetta</i>	1
45	Little Grebe	<i>Tachybaptus ruficollis</i>	0

46	Little Ringed Plover	<i>Charadrius dubius</i>	0
47	Little Stint	<i>Calidris minuta</i>	0
48	Little Tern	<i>Sternula albifrons</i>	1
49	Mallard	<i>Anas platyrhynchos</i>	0
50	Marbled Duck	<i>Marmaronetta angustirostris</i>	1
51	Marsh Sandpiper	<i>Tringa stagnatilis</i>	0
52	Mediterranean Gull	<i>Larus melanocephalus</i>	1
53	Northern Pintail	<i>Anas acuta</i>	0
54	Northern Shoveler	<i>Spatula clypeata</i>	0
55	Pied Avocet	<i>Recurvirostra avosetta</i>	1
56	Purple Heron	<i>Ardea purpurea</i>	1
57	Red knot	<i>Calidris canutus</i>	0
58	Ruddy Turnstone	<i>Arenaria interpres</i>	0
59	Ruff	<i>Calidris pugnax</i>	1
60	Sandwich Tern	<i>Thalasseus sandvicensis</i>	1
61	Slender-billed Gull	<i>Larus genei</i>	1
62	Spotted Redshank	<i>Tringa erythropus</i>	0
63	Squacco Heron	<i>Ardeola ralloides</i>	1
64	Temminck's Stint	<i>Calidris temminckii</i>	0
65	Tufted Duck	<i>Aythya fuligula</i>	0
66	Water Rail	<i>Rallus aquaticus</i>	0
67	Western Cattle Egret	<i>Bubulcus ibis</i>	0
68	Western Swampphen	<i>Porphyrio porphyrio</i>	1
69	Whimbrel	<i>Numenius phaeopus</i>	0
70	Whiskered Tern	<i>Chlidonias hybrida</i>	1
71	White Stork	<i>Ciconia ciconia</i>	1
72	Wood Sandpiper	<i>Tringa glareola</i>	1
73	Yellow-legged Gull	<i>Larus michahellis</i>	0

Table S2. Description of the attributes of the 16 wetlands under study in Sicily.

Isolation was the boundary-to-boundary distance from the closest wetland. Distance to the coastline was the minimum distance from the wetland boundary to the coastline. Water level was assessed with a metric pole at each sampling point, and averaged for each date of sampling. Water-level fluctuation was calculated as standard deviation of the water levels among the dates of sampling. Salinity was evaluated indirectly through the frequency of seawater intrusions observed during field surveys. Tourism pressure measured the level of tourist activities (walking, horse riding, watersports, angling, wildfowling etc.) in the close surroundings of each wetland during field surveys. Anthropization evaluated the occurrence of greenhouses, dumpsites, quarries, camping sites, caravan parks etc. Water diversion and water discharges quantified the presence of active drainage and discharge systems. Salinity and the four attributes related to anthropic pressure were measured on a semi-quantitative scale of 0 to 3 (0 if it was absent, 1 if localized, 2 if scattered, 3 if widespread), using both technical (the authors) and local (the natives, local policymakers and landowners) expertise.

Wetland	Wetland size (ha)	Isolation (m)	Distance to the coastline (m)	Mean water level (cm)	Water-level fluctuation (cm)	Salinity	Water diversion	Water discharges	Tourism pressure	Anthropization
Auruca	31.4	461	1,009	0.0	0.0	1	3	2	0	3
Baronello	20.5	461	779	24.3	10.7	0	1	2	1	2
Cuba	61.5	208	1,499	2.9	3.0	0	2	0	0	1
Faro	26.9	818	409	1,849.3	1.4	2	3	2	3	3
Ganzirri	34.1	816	990	497.6	2.6	2	3	3	3	3
Gela	107.8	65,943	2,326	99.5	42.2	0	3	3	1	3
Gornalunga	13.9	63,208	0	33.9	11.9	2	0	2	2	3
Longarini	109.9	208	1,674	1.2	1.5	3	3	3	3	3
Morghella	49.6	4,798	19	0.6	1.2	1	3	2	1	3
Pantano Bruno	16.5	1,419	1,162	11.2	6.8	0	2	2	1	3
Pantano Grande	28.3	0	274	4.9	3.0	2	0	0	3	0
Pantano Piccolo	15.9	0	19	26.3	5.0	1	0	0	2	0
Preola	30.8	488	1,318	145.6	6.4	0	0	0	1	2
Roveto	124.1	628	0	14.1	10.2	3	1	2	1	1
Tindari	7.4	50,349	198	200.1	86.4	3	0	0	3	0
Tondi	6.1	488	1,916	506.1	17.4	0	0	0	0	1

Table S3. Functional traits of the bird species sampled in the Sicilian wetlands.

Dietary guilds. Fish: piscivorous; herbivorous: folivorous, frugivorous and/or granivorous; invertebrates: arthropods and/or other invertebrates; carnivorous: other vertebrates and/or carrion; omnivorous: all the dietary categories together.

Foraging guilds. Diver from flight: species that catches food entering the water from flight; diver from the surface: species that catches food entering the water from the surface; intermediate wader: species having tarsometatarsus between 4 and 8 cm; large wader: tarsometatarsus > 8 cm; small wader: tarsometatarsus between 0 and 4 cm; surface feeder: species that collects items of food floating or swimming at the surface.

Migratory guilds. Mediterranean: species that remains in the Mediterranean basin; mixed: partly Mediterranean and partly trans-Saharan; sedentary: nonmigratory; trans-Saharan: species that breeds in Europe and overwinters in sub-Saharan Africa.

Species	Dietary guilds	Foraging guilds	Migratory guilds
Audouin's Gull	fish	surface feeder	mixed
Black Stork	fish	large wader	trans-Saharan
Black Tern	invertebrates	diver from flight	trans-Saharan
Black-crowned Night Heron	fish-invertebrates	intermediate wader	trans-Saharan
Black-headed Gull	fish-invertebrates-carnivorous	surface feeder	Mediterranean
Black-necked Grebe	invertebrates	diver from the surface	Mediterranean
Black-tailed Godwit	invertebrates	intermediate wader	trans-Saharan
Black-winged Stilt	invertebrates	large wader	trans-Saharan
Broad-billed Sandpiper	herbivorous -invertebrates	small wader	trans-Saharan
Caspian Tern	fish	diver from flight	trans-Saharan
Common Greenshank	fish-invertebrates	intermediate wader	mixed
Common Kingfisher	fish	diver from flight	Mediterranean
Common Moorhen	herbivorous -invertebrates	surface feeder	sedentary
Common Pochard	herbivorous -invertebrates	diver from the surface	mixed
Common Redshank	invertebrates	intermediate wader	mixed
Common Ringed Plover	invertebrates	small wader	trans-Saharan
Common Sandpiper	invertebrates	small wader	mixed
Common Shelduck	invertebrates	surface feeder	Mediterranean
Common Snipe	invertebrates	small wader	mixed
Common Tern	fish-invertebrates	diver from flight	trans-Saharan
Curlew Sandpiper	invertebrates	small wader	trans-Saharan
Dunlin	invertebrates	small wader	Mediterranean
Eurasian Coot	herbivorous -invertebrates	surface feeder	Mediterranean
Eurasian Curlew	herbivorous -invertebrates	large wader	mixed
Eurasian Spoonbill	fish-invertebrates	large wader	mixed
Eurasian Stone-curlew	invertebrates	intermediate wader	mixed
Eurasian Teal	herbivorous -invertebrates	surface feeder	mixed
Eurasian Wigeon	herbivorous	surface feeder	mixed
European Golden Plover	herbivorous -invertebrates	intermediate wader	mixed
Ferruginous Duck	herbivorous	diver from the surface	mixed
Gadwall	herbivorous	surface feeder	mixed
Garganey	herbivorous -invertebrates	surface feeder	trans-Saharan
Great Cormorant	fish	diver from the surface	Mediterranean

Great Crested Grebe	fish	diver from the surface	Mediterranean
Great Egret	fish-invertebrates-carnivorous	large wader	Mediterranean
Greater Flamingo	invertebrates	large wader	sedentary
Green Sandpiper	invertebrates	small wader	mixed
Grey Heron	fish-invertebrates-carnivorous	large wader	Mediterranean
Grey Plover	invertebrates	intermediate wader	Mediterranean
Gull-billed Tern	fish-invertebrates-carnivorous	diver from flight	trans-Saharan
Kentish Plover	invertebrates	small wader	mixed
Lesser Black-backed Gull	omnivorous	surface feeder	mixed
Little Bittern	fish-invertebrates	intermediate wader	trans-Saharan
Little Egret	fish-invertebrates	large wader	Mediterranean
Little Grebe	fish-invertebrates	diver from the surface	Mediterranean
Little Ringed Plover	invertebrates	small wader	trans-Saharan
Little Stint	invertebrates	small wader	trans-Saharan
Little Tern	fish-invertebrates	diver from flight	trans-Saharan
Mallard	herbivorous -invertebrates	surface feeder	sedentary
Marbled Duck	herbivorous -invertebrates	surface feeder	trans-Saharan
Marsh Sandpiper	invertebrates	intermediate wader	trans-Saharan
Mediterranean Gull	fish-invertebrates-carnivorous	surface feeder	Mediterranean
Northern Pintail	herbivorous -invertebrates	surface feeder	mixed
Northern Shoveler	herbivorous -invertebrates	surface feeder	mixed
Pied Avocet	invertebrates	large wader	mixed
Purple Heron	fish-invertebrates	large wader	trans-Saharan
Red knot	herbivorous -invertebrates	small wader	trans-Saharan
Ruddy Turnstone	invertebrates	small wader	mixed
Ruff	herbivorous -invertebrates	intermediate wader	trans-Saharan
Sandwich Tern	fish	diver from flight	mixed
Slender-billed Gull	fish-invertebrates-carnivorous	surface feeder	Mediterranean
Spotted Redshank	fish-invertebrates	intermediate wader	trans-Saharan
Squacco Heron	fish-invertebrates	intermediate wader	trans-Saharan
Temminck's Stint	invertebrates	small wader	trans-Saharan
Tufted Duck	herbivorous -invertebrates	diver from the surface	mixed
Water Rail	omnivorous	surface feeder	Mediterranean
Western Cattle Egret	invertebrates	intermediate wader	Mediterranean
Western Swamphen	herbivorous -invertebrates	surface feeder	sedentary
Whimbrel	herbivorous -invertebrates	intermediate wader	trans-Saharan
Whiskered Tern	fish-invertebrates	diver from flight	trans-Saharan
White Stork	fish-invertebrates-carnivorous	large wader	trans-Saharan
Wood Sandpiper	invertebrates	small wader	trans-Saharan
Yellow-legged Gull	omnivorous	surface feeder	sedentary

Table S4. Pairwise dissimilarities in species composition (i.e. pairwise beta diversity) between wetlands, measured using Jaccard's dissimilarity index for binary data (species presences-absences).

	Auruca	Baronello	Cuba	Faro	Ganzimi	Gela	Gomalunga	Longarini	Morghella	Pantano Bruno	Pantano Grande	Pantano Piccolo	Preola	Roveto	Tindari	Tondi
Auruca		1.00	1.00	1.00	0.94	0.98	1.00	1.00	1.00	1.00	1.00	0.94	0.95	0.98	1.00	1.00
Baronello	1.00		0.67	0.86	0.71	0.57	0.53	0.80	0.96	0.62	0.55	0.67	0.68	0.60	0.88	0.78
Cuba	1.00	0.67		0.91	0.83	0.73	0.70	0.72	1.00	0.57	0.48	0.75	0.90	0.57	0.86	0.91
Faro	1.00	0.86	0.91		0.70	0.78	0.89	0.83	0.92	0.90	0.82	0.93	0.87	0.88	0.76	0.91
Ganzimi	0.94	0.71	0.83	0.70		0.72	0.71	0.75	0.94	0.80	0.72	0.73	0.73	0.79	0.68	0.83
Gela	0.98	0.57	0.73	0.78	0.72		0.51	0.89	0.98	0.78	0.76	0.74	0.57	0.53	0.86	0.77
Gomalunga	1.00	0.53	0.70	0.89	0.71	0.51		0.88	1.00	0.66	0.70	0.63	0.64	0.60	0.84	0.66
Longarini	1.00	0.80	0.72	0.83	0.75	0.89	0.88		1.00	0.77	0.60	0.86	0.93	0.85	0.77	0.94
Morghella	1.00	0.96	1.00	0.92	0.94	0.98	1.00	1.00		1.00	0.95	1.00	0.95	0.98	1.00	1.00
Pantano Bruno	1.00	0.62	0.57	0.90	0.80	0.78	0.66	0.77	1.00		0.56	0.83	0.86	0.66	0.83	0.89
Pantano Grande	1.00	0.55	0.48	0.82	0.72	0.76	0.70	0.60	0.95	0.56		0.71	0.83	0.64	0.83	0.89
Pantano Piccolo	0.94	0.67	0.75	0.93	0.73	0.74	0.63	0.86	1.00	0.83	0.71		0.63	0.76	0.80	0.77
Preola	0.95	0.68	0.90	0.87	0.73	0.57	0.64	0.93	0.95	0.86	0.83	0.63		0.74	0.88	0.61
Roveto	0.98	0.60	0.57	0.88	0.79	0.53	0.60	0.85	0.98	0.66	0.64	0.76	0.74		0.91	0.81
Tindari	1.00	0.88	0.86	0.76	0.68	0.86	0.84	0.77	1.00	0.83	0.83	0.80	0.88	0.91		0.81
Tondi	1.00	0.78	0.91	0.91	0.83	0.77	0.66	0.94	1.00	0.89	0.89	0.77	0.61	0.81	0.81	

Figure S1. Nested distributions of the 73 avian species (columns) at the 16 wetlands (rows) in Sicily during the summer period (July-September). Yellow squares indicate species presence, blue ones indicate absence. IDs of bird species are the same as those in Supplementary Table S1. The topmost site (Roveto) was the most hospitable, the lowermost (Morghella) the least hospitable. The leftmost species (ID 38; Grey Heron *Ardea cinerea*) was the one whose niche requirements were most commonly and consistently met, the rightmost one (ID 57; Red knot *Calidris canutus*) was the rarest species.

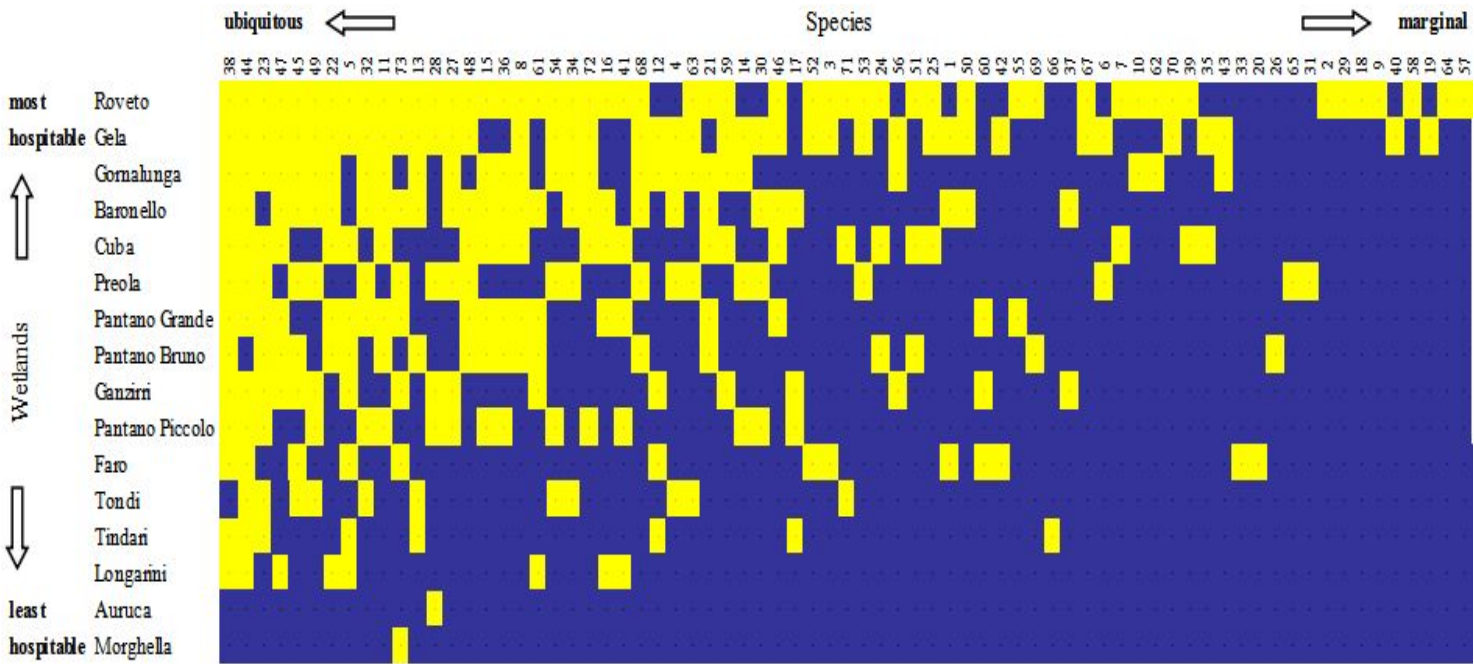


Table S5. Idiosyncratic wetlands in Sicily.

Wetland	Idiosyncratic index (<i>T</i>)
Faro	29.43
Longarini	24.99
Preola	22.29
Tindari	20.43
Gela	18.97
Tondi	17.68
Auruca	17.51
Pantano Bruno	15.75
Pantano Piccolo	15.59
Cuba	14.18
Roveto	13.25
Ganzirri	10.59
Gornalunga	8.96
Morghella	7.52
Pantano Grande	6.04
Baronello	5.96

Table S6. Idiosyncratic bird species in the Sicilian wetlands.

Bird Species	Idiosyncratic index (<i>T</i>)
Eurasian Wigeon	90.88
Common Sandpiper	52.98
Kentish Plover	46.98
Yellow-legged Gull	42.81
Slender-billed Gull	38.85
Common Kingfisher	38.74
Common Ringed Plover	38.61
Common Tern	37.48
Gadwall	37.02
Eurasian Stone-curlew	36.84
Great Cormorant	35.25
Sandwich Tern	34.00
Tufted Duck	33.87
Water Rail	33.59
Common Snipe	30.90
Black-headed Gull	27.24
Green Sandpiper	25.19
Black-crowned Night Heron	22.71
White Stork	21.32
Ferruginous Duck	19.38
Gull-billed Tern	18.96
Common Pochard	18.33
Common Moorhen	18.01
Northern Shoveler	17.80
Audouin's Gull	17.33
Lesser Black-backed Gull	16.31
Squacco Heron	16.04
Great Egret	14.39
Black-necked Grebe	13.85
Dunlin	12.30
Great Crested Grebe	12.13
Mallard	12.01
Whimbrel	11.97
Purple Heron	11.47
Little Grebe	11.04
Grey Plover	10.48
Little Bittern	10.30
Greater Flamingo	10.18
Common Redshank	9.92
Eurasian Coot	9.80

Little Stint	9.51
Pied Avocet	9.14
Black Tern	9.11
Mediterranean Gull	8.87
Marsh Sandpiper	7.69
Garganey	7.68
Wood Sandpiper	7.01
Eurasian Curlew	6.56
Black-tailed Godwit	6.10
Curlew Sandpiper	5.87
Little Egret	5.40
Eurasian Teal	5.35
Ruff	4.13
Spotted Redshank	3.78
Little Tern	3.49
Caspian Tern	3.13
Marbled Duck	3.03
Common Greenshank	2.78
Little Ringed Plover	2.42
Grey Heron	2.40
Northern Pintail	2.24
Western Swamphen	1.76
Eurasian Spoonbill	0.83
Whiskered Tern	0.67
Black-winged Stilt	0.36
Western Cattle Egret	0.02
Black Stork	0
Broad-billed Sandpiper	0
Common Shelduck	0
European Golden Plover	0
Red knot	0
Ruddy Turnstone	0
Temminck's Stint	0

Figure S2. Results of 10,000 null model simulations for the two indices C-score (C) and number of checkerboard species pairs (N_c). C^{obs} was 3.934, and resulted nonsignificant (mean of $C^{sim} = 3.864$; variance of $C^{sim} = 0.002$; $p(C^{obs} \leq C^{sim}) = 0.896$; $p(C^{obs} \geq C^{sim}) = 0.104$). N_c^{obs} was 637, and was not significant as well (mean of $N_c^{sim} = 603.29$; variance of $N_c^{sim} = 1137.30$; $p(N_c^{obs} \leq N_c^{sim}) = 0.838$; $p(N_c^{obs} \geq N_c^{sim}) = 0.162$).

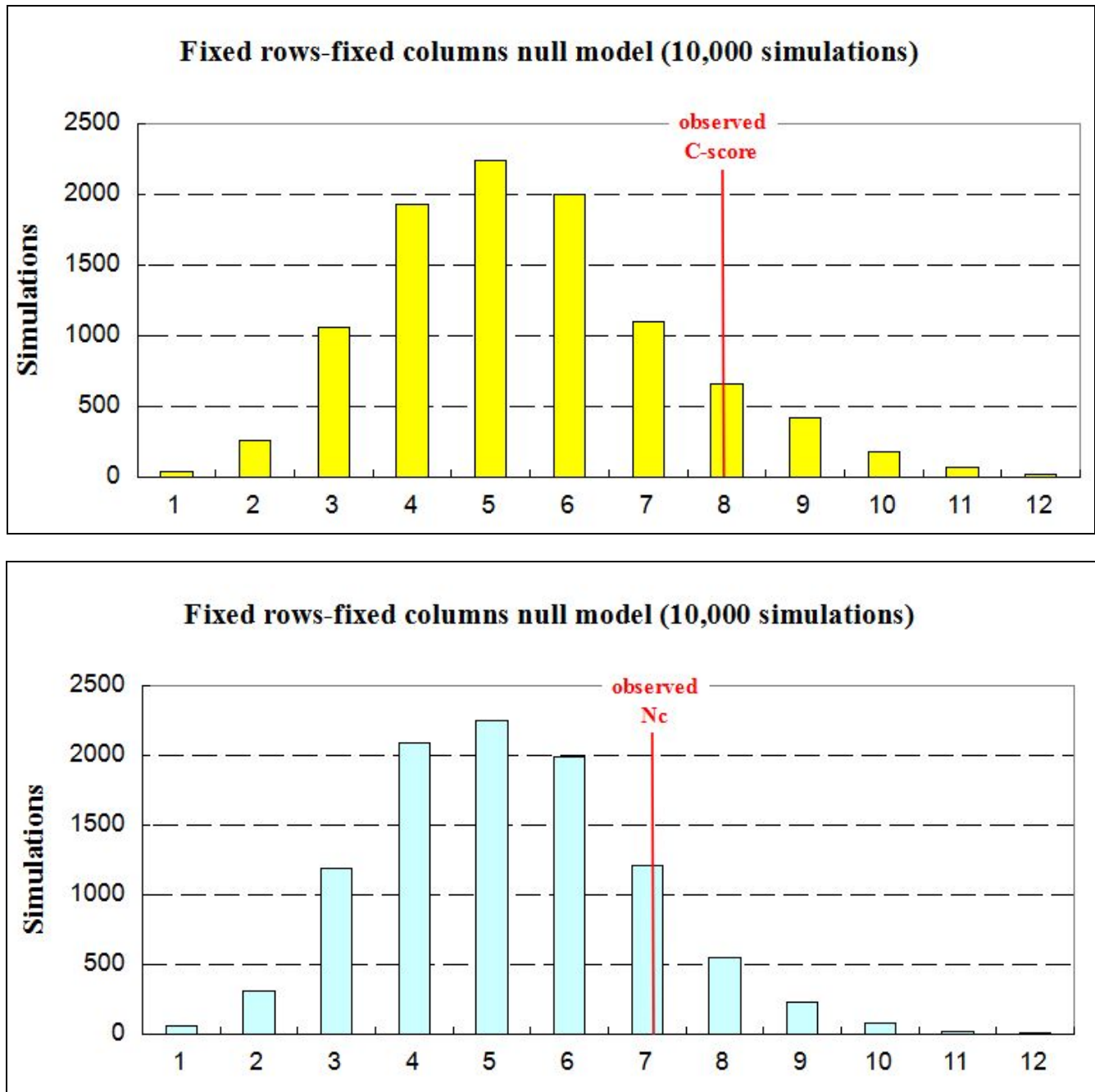


Table S7. Cross-tabulation analysis of species guilds. A) number of bird species belonging to different dietary (rows) and foraging (columns) guilds. B) number of bird species belonging to different dietary (rows) and migratory (columns) guilds. C) number of bird species belonging to different foraging (rows) and migratory (columns) guilds. If no number is given, there were no species for that particular row-column combination.

A)

	diver from flight	diver from the surface	intermediate wader	large wader	small wader	surface feeder	Grand Total
fish	3	2		1		1	7
fish-invertebrates	3	1	5	3			12
fish-invertebrates-carnivorous	1			3		3	7
herbivorous		1				2	3
herbivorous-invertebrates		2	3	1	2	9	17
invertebrates	1	1	6	3	12	1	24
omnivorous						3	3
Grand Total	8	7	14	11	14	19	

B)

	Mediterranean	mixed	sedentary	trans-Saharan	Grand Total
fish	3	2		2	7
fish-invertebrates	2	2		8	12
fish-invertebrates-carnivorous	5			2	7
herbivorous		3			3
herbivorous-invertebrates	1	7	3	6	17
invertebrates	5	8	1	10	24
omnivorous	1	1	1		3
Grand Total	17	23	5	28	

C)

	Mediterranean	mixed	sedentary	trans-Saharan	Grand Total
diver from flight	1	1		6	8
diver from the surface	4	3			7
intermediate wader	2	4		8	14
large wader	3	3	1	4	11
small wader	1	5		8	14
surface feeder	6	7	4	2	19
Grand Total	17	23	5	28	

Table S8. Boundary-to-boundary distances (in meters) between the wetlands under study.

	Auruca	Baronello	Cuba	Faro	Ganzirri	Gela	Gornalunga	Longarini	Morghella	Pantano bruno	Pantano grande	Pantano piccolo	Preola	Roveto	Tindari	Tondi
Auruca		461	2,597	182,918	181,294	72,253	77,194	3,781	4,798	5,993	13,171	13,863	237,457	10,315	160,869	236,572
Baronello	461		3,520	184,250	182,629	72,990	78,566	4,702	4,980	6,577	14,504	15,187	238,145	11,655	162,239	237,258
Cuba	2,597	3,520		181,137	179,478	68,666	74,744	208	7,038	3,382	11,752	12,527	233,947	8,973	158,309	233,066
Faro	182,918	184,250	181,137		817	179,374	109,279	181,234	179,723	183,729	169,042	168,276	272,573	170,312	52,806	272,359
Ganzirri	181,294	182,629	179,478	817		177,112	107,341	179,545	178,155	182,032	167,423	166,658	270,121	168,685	50,349	269,905
Gela	72,253	72,990	68,666	179,374	177,112		76,810	66,466	75,966	65,943	70,096	70,594	163,200	69,922	138,559	162,339
Gornalunga	77,194	78,566	74,744	109,279	107,341	76,810		74,269	75,373	76,569	63,897	63,208	216,805	64,950	83,253	216,194
Longarini	3,781	4,702	208	181,234	179,545	66,466	74,269		8,032	1,419	12,284	13,081	231,743	9,569	157,675	230,862
Morghella	4,798	4,980	7,038	179,723	178,155	75,966	75,373	8,032		11,066	10,909	11,412	241,366	8,538	159,142	240,493
Pantano bruno	5,993	6,577	3,382	183,729	182,032	65,943	76,569	1,419	11,066		15,223	16,057	230,990	12,652	159,877	230,100
Pantano grande	13,171	14,504	11,752	169,042	167,423	70,096	63,897	12,284	10,909	15,223		0	235,334	628	147,663	234,491
Pantano piccolo	13,863	15,187	12,527	168,276	166,658	70,594	63,208	13,081	11,412	16,057	0		235,743	1,434	146,977	234,904
Preola	237,457	238,145	233,947	272,573	270,121	163,200	216,805	231,743	241,366	230,990	235,334	235,743		235,229	219,265	488
Roveto	10,315	11,655	8,973	170,312	168,685	69,922	64,950	9,569	8,538	12,652	628	1,434	235,229		148,707	234,383
Tindari	160,869	162,239	158,309	52,806	50,349	138,559	83,253	157,675	159,142	159,877	147,663	146,977	219,265	148,707		219,049
Tondi	236,572	237,258	233,066	272,359	269,905	162,339	216,194	230,862	240,493	230,100	234,491	234,904	488	234,383	219,049	

Table S9. List of the bird species with three or less occurrences out of 16 wetlands.

Species	Occurrences
Audouin's Gull	3
Black Tern	3
Eurasian Curlew	3
Eurasian Spoonbill	3
Marbled Duck	3
Marsh Sandpiper	3
Mediterranean Gull	3
Northern Pintail	3
Purple Heron	3
Sandwich Tern	3
White Stork	3
Black-necked Grebe	2
Black-tailed Godwit	2
Caspian Tern	2
Great Egret	2
Green Sandpiper	2
Grey Plover	2
Lesser Black-backed Gull	2
Little Bittern	2
Pied Avocet	2
Spotted Redshank	2
Western Cattle Egret	2
Whimbrel	2
Whiskered Tern	2
Black Stork	1
Broad-billed Sandpiper	1
Common Shelduck	1
Common Snipe	1
Common Tern	1
Eurasian Stone-curlew	1
European Golden Plover	1
Gadwall	1
Great Cormorant	1
Gull-billed Tern	1
Red knot	1
Ruddy Turnstone	1
Temminck's Stint	1
Tufted Duck	1
Water Rail	1