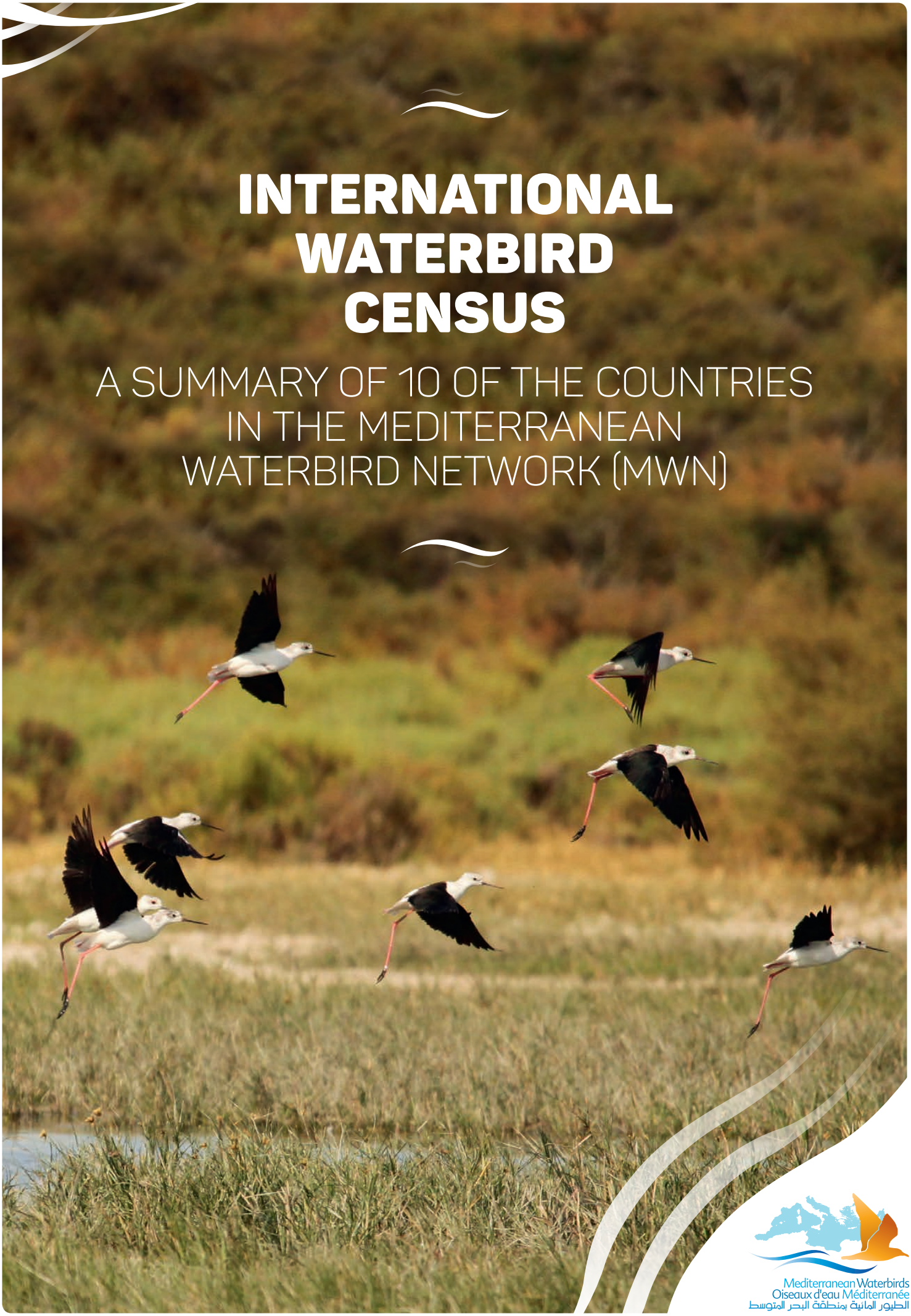
INTERNATIONAL WATERBIRD CENSUS

A SUMMARY OF 10 OF THE COUNTRIES IN THE MEDITERRANEAN WATERBIRD NETWORK (MWN)



Mediterranean Waterbirds
Oiseaux d'eau Méditerranée
الطيور المائية بمنطقة البحر المتوسط

2009 - 2018

In alphabetical order, the countries and structures coordinating the waterbird counts in the 10 countries participating in this report are:

- **ALGERIA:** General Directorate of Forestry (DGF) in Algeria ▸ Nadjiba Bendjedda and Samir Sayoud
- **EGYPT:** Egyptian Environmental Affairs Agency (EEAA) ▸ Wed Abdelatif Ibrahim
- **SPAIN:** SEO BirdLife ▸ Blas Molina
- **FRANCE:** Ligue pour la Protection des Oiseaux (LPO) ▸ Gwenaël Quaintenne and Caroline Moussy
- **GREECE:** Hellenic Ornithological Society (HOS) ▸ Danae Portolu
- **ITALY:** Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) ▸ Marco Zenatello and Nicola Baccetti
- **LIBYA:** Libyan Society for Birds (LSB) ▸ Khaled Etayeb
- **MOROCCO:** Scientific Institute of Rabat ▸ Mohamed Dakki
- **TUNISIA:** Association "Les Amis des oiseaux/BirdLife en Tunisie" (AAO) ▸ Hichem Azafzaf
- **TURKEY:** Ornithological Research Centre (ORC) ▸ Kiraz Erciyas-Yavuz

Coordination of the Mediterranean Waterbird Network, and producers of this report:
Tour du Valat Research Institute, Laura Dami

Cover image: Black-winged Stilt in flight © J. Jalbert - Tour du Valat - **Page 2 image:** Eurasian Teals and Eurasian Wigeons © N. Yavuz - ORC - **Translation:** Jeanette Freynet
Cartography: Marie Suet, Tour du Valat - **Graphic Design and Layout:** Atelier Guillaume Baldini - **Authors:** Laura Dami and Elie Gaget

THE INTERNATIONAL WATERBIRD CENSUS

WHAT IS IT?

The International Waterbird Census (IWC) is carried out simultaneously on wetlands in every geographical region of the world (Africa-Eurasia, Asia-Pacific, Caribbean...). It takes place over one or two days, historically around mid-January (a 10-day window around mid-January depending on local constraints). This count is intended to be a snapshot of the distribution of waterbirds on the different flyways at a time when populations are considered to be at their least mobile, between two migrations.

IWC data are managed by Wetlands International as part of an exceptionally large database that tracks long-term trends in the numbers and distribution of waterbirds, improves knowledge of lesser-known species and wetlands, and identifies and monitors sites recognised as Wetlands of International Importance under the Ramsar Convention*.

** During the 1960s, a number of countries and non-governmental organisations, concerned about the increasing loss and degradation of wetlands for migratory waterbirds, negotiated a treaty for the conservation and sustainable use of wetlands, which was subsequently adopted in 1971, in Ramsar, Iran. At this conference, representatives from 18 countries agreed on the wording of the Convention on Wetlands, especially as Waterfowl Habitat, which was one of the primary criteria adopted to identify wetlands.*

In each country, a national coordinator leads, facilitates, organises and compiles the counts which are carried out by volunteers following a standardised procedure, and then transmits the data to Wetlands International.

WHY COUNT WATERBIRDS?

Waterbirds are an essential and easily quantifiable component of wetland ecosystems. Their presence, numbers and trends in a wetland environment provide information on its ecological and conservation status. Waterbirds provide many ecosystem services (Green et al., 2013). They also play an important social role as a source of food, recreation and tourism.

WHICH WETLANDS TO COUNT, AND WHICH BIRDS?

All types of natural and artificial wetlands are monitored: rivers, lakes, reservoirs, ponds, freshwater and brackish marshes, seashores, rice fields, sewage treatment plants, as well as sites where birds are concentrated, even those not on water (e.g. rubbish dumps and urban roosts). The species counted include all types of waterbirds regularly found in wetlands (grebes, loons, cormorants, pelicans, herons, egrets, storks, ibises, spoonbills, flamingos, ducks, geese, swans, cranes, rails, waders, seagulls, terns and other birds that depend heavily on wetland food resources).

➤ ***More details*** *on how to carry out waterbird counts can be found in the document "Guidelines for participants" (https://cutt.ly/3bdu6Vn)*

DATA THAT COUNTS!

Data from the IWC **feed directly into baseline data and reports** on the conservation status of waterbird species, including:

- **on a global scale**, for Wetlands International's Waterbird Population Estimates, and the Ramsar Convention;
- **on the scale of the area covered** by the African-Eurasian Migratory Waterbird Agreement (AEWA): the Conservation Status Report on Migratory Waterbirds;
- **on a European scale** for BirdLife International's European Red List of Threatened Bird Species, which is fed by regular reporting exercises carried out by each EU member state under the Birds Directive.

To improve the quality and quantity of monitoring data, and to obtain a more realistic view of the waterbird population trends which are needed to assess their conservation status and that of the wetlands on which they depend, various initiatives have been developed in Africa and Asia; the most recent include the Mediterranean Waterbirds Network, the East-Atlantic Flyway, the RESSOURCE project and the Asian Waterbird Census.

Eurasian Spoonbill
© D. Hadj-Aissa - DGF Algérie

THE MEDITERRANEAN **WATERBIRDS NETWORK**

The Mediterranean Waterbirds Network (MWN) is a project supporting and coordinating waterbird counts on a Mediterranean scale. Created in 2012, within the framework of the African Initiative of the African-Eurasian Migratory Waterbird Agreement (AEWA), the MWN was initially developed via a collaboration between the Tour du Valat, the Office Français de la Biodiversité (OFB, ex-ONCFS), and the national coordinators of winter waterbird counts in five North African countries (Morocco, Algeria, Tunisia, Libya and Egypt).

WHAT DOES THE NETWORK DO?

The network aims to achieve two main objectives:

- **To improve and develop the quality and quantity of waterbird data** through training, implementation of tools, support for data collection and verification, fund sourcing;
- **To enhance the value of data and fieldwork**, through scientific or populist publications which highlight the importance of data collection. (Sayoud et al., 2017; Dakki et al., 2021).

Furthermore, through strengthened collaborations with other Mediterranean initiatives, such as the Mediterranean Wetlands Observatory and the Mediterranean Alliance for Wetlands, the MWN actively contributes to the conservation and protection of wetlands in the region.

WHO IS INVOLVED?

While in 2012 the work was mainly concentrated in the five North African countries, once the database had been improved and the scientific valorisation had been successfully implemented, in order to develop studies on the status of waterbird populations and counts on a regional scale, the network decided in 2017 to open up to exchanges and discussions with other Mediterranean countries. Close cooperation has now been established with Turkey, Spain, France, Italy and Greece, and exchanges have begun with Albania, Northern Macedonia, Montenegro and Serbia.

© Tour du Valat / Sources: DGF Algérie, EEAA, SEO/Birdlife Spain, LPO, HOS/BirdLife Greece, ISPRA, LSB, Institut scientifique de Rabat, AAO/BirdLife en Tunisie, Ondokuz Mayıs University

NUMBER OF VOLUNTEERS IN THE 10 PARTICIPATING COUNTRIES:

ON AVERAGE
8 220 VOLUNTEER COUNTERS

or hired counters participate in the International Waterbird Census (IWC) each year

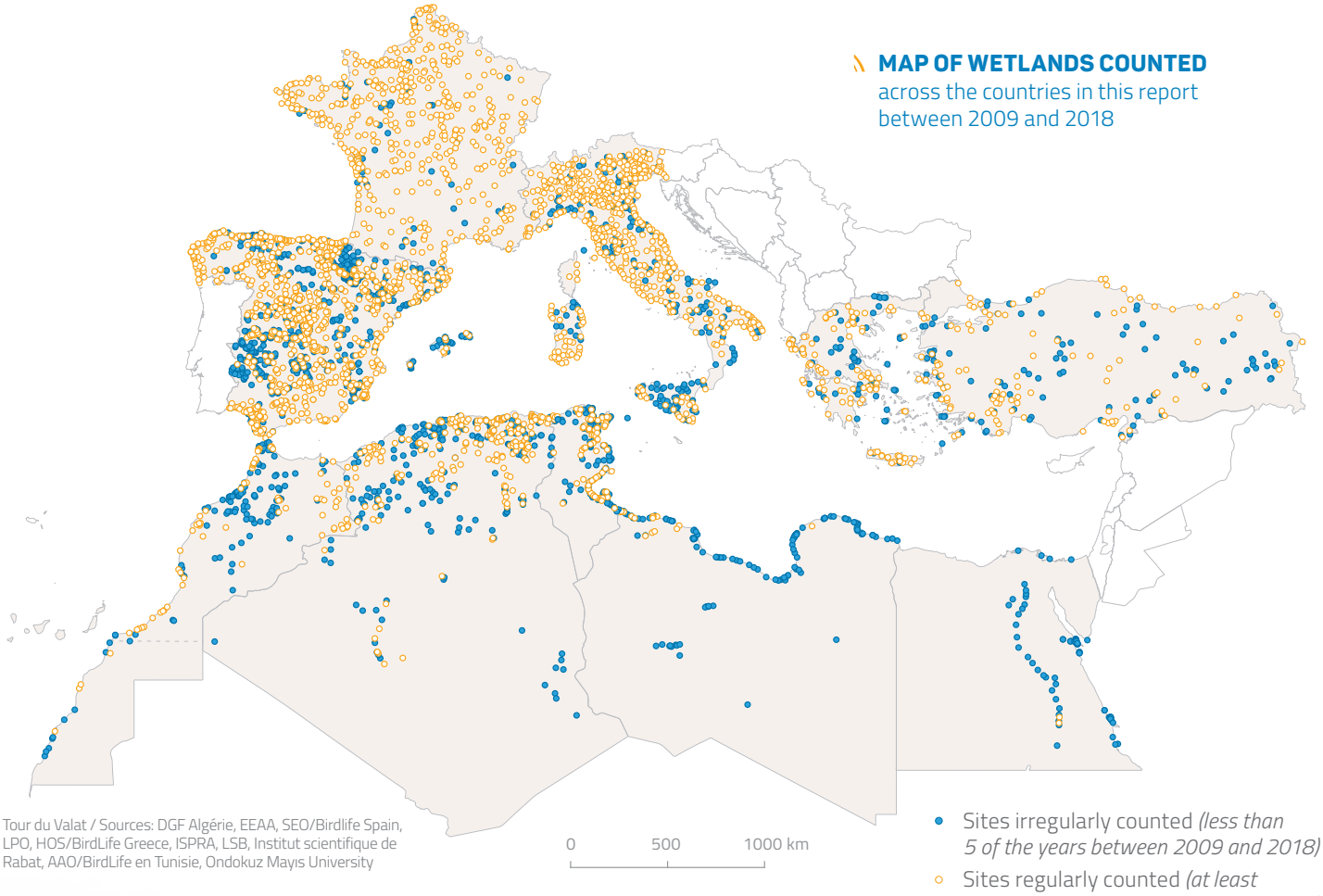
NUMBER OF WETLANDS COUNTED:

APPROXIMATELY
3 150 WETLANDS COUNTED

on average each year across the 10 countries in the report

MAP OF WETLANDS COUNTED

across the countries in this report between 2009 and 2018



© Tour du Valat / Sources: DGF Algérie, EEAA, SEO/Birdlife Spain, LPO, HOS/BirdLife Greece, ISPRA, LSB, Institut scientifique de Rabat, AAO/BirdLife en Tunisie, Ondokuz Mayıs University

- Sites irregularly counted *(less than 5 of the years between 2009 and 2018)*
- Sites regularly counted *(at least 5 of the years between 2009 and 2018)*

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WATERBIRD POPULATIONS* IN THE MEDITERRANEAN

The ten countries in this report are concerned with at least 324 waterbird populations. Of these populations, 121 are declining, some are presumed extinct, while only 85 are increasing (significantly or slightly), and 77 are stable. The remaining 43 populations are fluctuating or undetermined due to lack of the regular or effective counts needed to determine their actual trends.

Below is a summary table of Anatidae populations present in the 10 countries of this report, as recorded on the Critical Site Network *(CSN Tool 2.0 http://wow.wetlands.org/en/species).*

Trends have been taken from Waterbird Population Estimates *(WPE; http://wpe.wetlands.org).*

** A waterbird population can be defined as a distinct assemblage of individuals which does not experience significant emigration or immigration (definition of Wetlands International, 2002).*

This table is an extract of 83 species of Anseriformes which occur in at least one of the countries in this report. Note that some species have multiple populations in the region, each of which may exhibit contrasting trends, and that each country may host more than one population of the same species.

Annex A contains the same information for all the other waterbird populations.

ORDER - *FAMILY* *Species - Scientific name*	English name	Population name	Trends years	Trends[1]	Countries involved in the report and insterested by the population
ANSERIFORMES - *ANATIDAE*					
Oxyura leucocephala	**White-headed Duck**	West Mediterranean (Spain & Morocco)	*2000-2012*	→	Morocco, Spain, France
Oxyura leucocephala	**White-headed Duck**	East Mediterranean, Turkey & South-west Asia	*2006-2015*	↘	Greece, Turkey, Egypt
Oxyura leucocephala	**White-headed Duck**	Algeria & Tunisia	*2006-2015*	→	Algeria, Tunisia
Cygnus olor	**Mute Swan**	North-west Mainland & Central Europe	*2000-2015*	↗ →	Spain, France, Italy
Cygnus olor	**Mute Swan**	Black Sea	*2000-2015*	→	Italy, Greece, Turkey
Cygnus cygnus	**Whooper Swan**	N Europe & W Siberia/Black Sea & E Mediterranean	*2006-2015*	↗	Italy, Greece, Turkey
Cygnus cygnus	**Whooper Swan**	West & Central Siberia/Caspian	*2006-2015*	→	Turkey
Cygnus cygnus	**Whooper Swan**	Iceland/UK & Ireland	*2005-2015*	↗	France
Cygnus cygnus	**Whooper Swan**	N Europe & W Siberia/Black Sea & E Mediterranean	*2006-2015*	↗	France
Cygnus columbianus	**Tundra Swan**	bewickii, Western Siberia & NE Europe/North-west Europe	*2006-2015*	↘	France, Italy
Cygnus columbianus	**Tundra Swan**	bewickii, Northern Siberia/Caspian	*2006-2015*	↗	Greece, Turkey
Branta bernicla	**Brent Goose**	bernicla, Western Siberia/ Western Europe	*2002-2011*	→	France
Branta leucopsis	**Barnacle Goose**	Russia/Germany & Netherlands	*2000-2014*	↗	France
Anser anser	**Greylag Goose**	anser, NW Europe/ South-west Europe	*2003-2012*	↗	Algeria, Morocco, Spain, France
Anser anser	**Greylag Goose**	anser, Central Europe/North Africa	*2003-2012*	↗	Tunisia, Algeria, Italy
Anser anser	**Greylag Goose**	rubrirostris, Black Sea & Turkey	*2000-2012*	→	Turkey
Anser fabalis	**Bean Goose**	rossicus, West & Central Siberia/ NE & SW Europe	*1990-2013*	↗	Spain, France, Italy, Greece
Anser albifrons	**Greater White-fronted Goose**	albifrons, NW Siberia & NE Europe/ North-west Europe	*2003-2012*	→	France
Anser albifrons	**Greater White-fronted Goose**	albifrons, Western Siberia/ Black Sea & Turkey	*2003-2012*	↗	Turkey, Greece
Anser albifrons	**Greater White-fronted Goose**	albifrons, Western Siberia/ Central Europe	*2003-2012*	↗	Italy

[1] Where there is uncertainty about a trend, the WPE provides both possibilities (reading for example "Stable or on the rise").

Cattle Egret - © D. Hadj-Aissa - DGF Algérie

Greater White-fronted Goose - © N. Yavuz - ORC

ORDER - *FAMILY* *Species - Scientific name*	English name	Population name	Trends years	Trends	Countries involved in the report and insterested by the population
ANSERIFORMES - *ANATIDAE*					
Anser erythropus	**Lesser White-fronted Goose**	NE Europe & W Siberia/Black Sea & Caspian	*1999-2013*	↘	Turkey
Clangula hyemalis	**Long-tailed Duck**	Western Siberia/North Europe (bre)	*1995-2010*	↘	France, Italy
Clangula hyemalis	**Long-tailed Duck**	Iceland & Greenland (bre)	*2000-2012*	*Unknown*	France
Somateria mollissima	**Common Eider**	mollissima, Baltic, Denmark & Netherlands	*2006-2015*	→	France, Spain
Melanitta fusca	**Velvet Scoter**	Western Siberia & Northern Europe/ NW Europe	*1992-2009*	↘	Spain, France, Italy
Melanitta fusca	**Velvet Scoter**	Black Sea & Caspian	*2006-2015*	↗	Turkey
Melanitta nigra	**Common Scoter**	W Siberia & N Europe/W Europe & NW Africa	*2000-2015*	→ ↗	Morocco, Spain, France, Italy
Bucephala clangula	**Common Goldeneye**	clangula, North-west & Central Europe (win)	*2006-2015*	→ ↘	France, Italy
Bucephala clangula	**Common Goldeneye**	clangula, North-east Europe/Adriatic	*2000-2012*	→ ↘	Italy, Greece
Bucephala clangula	**Common Goldeneye**	clangula, Western Siberia & North-east Europe/Black Sea	*2006-2015*	↗	Greece, Turkey
Mergellus albellus	**Smew**	North-west & Central Europe (win)	*2006-2015*	→	France, Italy
Mergellus albellus	**Smew**	North-east Europe/Black Sea & East Mediterranean	*2006-2015*	↘	Italy, Greece, Turkey
Mergus merganser	**Goosander**	merganser, North-west & Central Europe (win)	*2006-2015*	→ ↘	France
Mergus merganser	**Goosander**	merganser, North-east Europe/ Black Sea	*2000-2012*	→ ↗	Turkey, Greece
Mergus serrator	**Red-breasted Merganser**	North-west & Central Europe (win)	*2006-2015*	→ ↘	Morocco, Spain, France, Italy
Mergus serrator	**Red-breasted Merganser**	North-east Europe/Black Sea & Mediterranean	*2006-2015*	↘	Greece, Turkey
Alopochen aegyptiaca	**Egyptian Goose**	Eastern & Southern Africa	*2006-2015*	↘	Egypt
Tadorna tadorna	**Common Shelduck**	North-west Europe	*2006-2015*	→	Spain, France, Italy
Tadorna tadorna	**Common Shelduck**	Black Sea & Mediterranean	*2006-2015*	↗	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Tadorna ferruginea	**Ruddy Shelduck**	East Mediterranean & Black Sea/ North-east Africa	*2006-2015*	↗	Greece, Turkey, Egypt
Tadorna ferruginea	**Ruddy Shelduck**	North-west Africa	*2006-2015*	↗	Spain, Morocco, Algeria, Tunisia
Marmaronetta angustirostris	**Marbled Teal**	East Mediterranean	*2006-2015*	↘	Greece, Turkey, Egypt
Marmaronetta angustirostris	**Marbled Teal**	West Mediterranean/West Medit. & West Africa	*2006-2015*	↘	Spain, Morocco, Algeria, Tunisia
Netta rufina	**Red-crested Pochard**	South-west & Central Europe/ West Mediterranean	*2006-2015*	↗	Spain, Morocco, Algeria, Tunisia
Netta rufina	**Red-crested Pochard**	Black Sea & East Mediterranean	*2006-2015*	↗	Greece, Turkey, Egypt
Aythya ferina	**Common Pochard**	North-east Europe/ North-west Europe	*2006-2015*	↘	France
Aythya ferina	**Common Pochard**	Central & NE Europe/Black Sea & Mediterranean	*2006-2015*	↘	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Aythya ferina	**Common Pochard**	Western Siberia/South-west Asia	*2006-2015*	↘	Egypt

WATERBIRD POPULATIONS
IN THE MEDITERRANEAN

ORDER - *FAMILY* *Species - Scientific name*	English name	Population name	Trends years	Trends	Countries involved in the report and insterested by the population
ANSERIFORMES - *ANATIDAE*					
Aythya nyroca	**Ferruginous Duck**	West Mediterranean/North & West Africa	*2006-2015*	↗	Spain, France, Morocco, Algeria, Tunisia
Aythya nyroca	**Ferruginous Duck**	Eastern Europe/E Mediterranean & Sahelian Africa	*2000-2012*	↗	Algeria, Tunisia, Libya, Egypt
Aythya nyroca	**Ferruginous Duck**	Western Asia/SW Asia & NE Africa	*1984-2015*	↗	Egypt, Turkey
Aythya fuligula	**Tufted Duck**	North-west Europe (win)	*2006-2015*	↘	France, Italy
Aythya fuligula	**Tufted Duck**	Central Europe, Black Sea & Mediterranean (win)	*2006-2015*	↘	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Aythya fuligula	**Tufted Duck**	Western Siberia/SW Asia & NE Africa	*2006-2015*	↘	Egypt, Turkey
Aythya marila	**Greater Scaup**	marila, Northern Europe/ Western Europe	*2000-2012*	↘	Spain, France, Italy
Aythya marila	**Greater Scaup**	marila, Western Siberia/Black Sea & Caspian	*2006-2014*	↘	Turkey, Greece
Spatula querquedula	**Garganey**	Western Siberia/SW Asia, NE & Eastern Africa	*2006-2014*	↘	Egypt, Turkey
Spatula querquedula	**Garganey**	Western Siberia & Europe/ West Africa	*1971-2015*	→	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Spatula clypeata	**Northern Shoveler**	North-west & Central Europe (win)	*2006-2015*	↗	Spain, France, Italy
Spatula clypeata	**Northern Shoveler**	W Siberia, NE & E Europe/S Europe & West Africa	*2006-2015*	→	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Spatula clypeata	**Northern Shoveler**	W Siberia/SW Asia, NE & Eastern Africa	*2006-2015*	→	Egypt, Turkey
Mareca strepera	**Gadwall**	strepera, North-west Europe	*2006-2015*	↗	France
Mareca strepera	**Gadwall**	strepera, North-east Europe/ Black Sea & Mediterranean	*2006-2015*	→	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Mareca strepera	**Gadwall**	strepera, Western Siberia/ SW Asia & NE Africa	*2006-2015*	→	Egypt, Turkey
Mareca penelope	**Eurasian Wigeon**	Western Siberia & NE Europe/ NW Europe	*2006-2015*	↘	France
Mareca penelope	**Eurasian Wigeon**	W Siberia & NE Europe/Black Sea & Mediterranean	*2006-2015*	↘	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Mareca penelope	**Eurasian Wigeon**	Western Siberia/SW Asia & NE Africa	*2006-2015*	↘	Egypt, Turkey
Anas platyrhynchos	**Mallard**	platyrhynchos, North-west Europe	*2006-2015*	→	France
Anas platyrhynchos	**Mallard**	platyrhynchos, Northern Europe/ West Mediterranean	*2006-2015*	→	Spain, France, Italy, Morocco, Algeria, Tunisia, Libya
Anas platyrhynchos	**Mallard**	platyrhynchos, Eastern Europe/ Black Sea & East Mediterranean	*2006-2015*	→	Greece, Turkey, Egypt, Libya
Anas platyrhynchos	**Mallard**	platyrhynchos, Western Siberia/ South-west Asia	*2006-2015*	↗	Egypt, Turkey
Anas acuta	**Northern Pintail**	North-west Europe	*2006-2015*	→	France, Spain
Anas acuta	**Northern Pintail**	W Siberia, NE & E Europe/S Europe & West Africa	*2006-2015*	→	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Anas acuta	**Northern Pintail**	Western Siberia/SW Asia & Eastern Africa	*2005-2015*	↘	Greece, Turkey, Egypt, Libya
Anas crecca	**Common Teal**	crecca, North-west Europe	*2005-2015*	↗	France, Spain, Italy
Anas crecca	**Common Teal**	crecca, W Siberia & NE Europe/ Black Sea & Mediterranean	*2006-2015*	↗	Spain, France, Italy, Greece, Turkey, Egypt, Libya, Tunisia, Algeria, Morocco
Anas crecca	**Common Teal**	crecca, Western Siberia/SW Asia & NE Africa	*2006-2015*	→	Egypt, Turkey

WATERBIRD GROUPS

Despite the disparities between countries in how the counts were organised, in the number of volunteers available and the coverage rate of each country's wetlands, some trends can be observed in the figures.

Overall, it can be seen that some countries are more important for certain bird groups. For example, for Anatidae, Italy, France, Spain, Turkey and Algeria are particularly important; for Grebes and Plongeons, Turkey, France and Italy are particularly important.

For the majority of birds, it appears that the countries on the northern and eastern shores of the Mediterranean are more important, but this could also be a reflection of the region's stability and the feasibility of the counts over the observation period.

Group details and averages are presented in the individual country reports.

Great White Pelican and Dalmatian Pelican
© M. Ekker/HOS-BirdLife Greece

Mean 2014-2018	Anatidae	Loons & Grebes	Ibis, Spoonbills & Storks	Rails & Cranes	Flamingos	Ardeidae	Cormorants	Waders	Laridae
Spain	**699,034**	20,836	**33,540**	139,535	**85,594**	**47,731**	36,299	**384,028**	**381,825**
France	**856,436**	**58,832**	3,485	**363,567**	40,338	**40,021**	**68,737**	**850,703**	**416,438**
Italy	**865,805**	**50,767**	2,438	**239,981**	40,428	**38,309**	**90,703**	**172,568**	**342,554**
Greece	282,565	**31,005**	877	133,783	31,616	8,213	**41,566**	48,857	74,448
Turkey	**495,989**	**60,206**	374	**706,476**	**89,046**	7,264	**50,369**	35,191	**205,433**
Egypt	14,077	207	2,345	4,927	101	9,110	13,453	8,170	19,922
Libya	778	143	56	156	593	359	404	2,310	3,663
Tunisia	142,831	4,268	3,009	57,025	**65,447**	4,843	8,167	107,817	55,374
Algeria	205,098	7,000	1,096	59,671	**76,625**	12,832	10,028	18,821	42,420
Morocco	92,616	6,002	8,280	33,652	4,949	8,057	5,092	**179,863**	100,156

SUMMARY TABLE SHOWING AVERAGE NUMBERS FOR SELECTED BIRD GROUPS FOR THE PERIOD 2014-2018
for each country covered by this report *(in bold the most important values for each group)*

Sanderlings in flight
© D. Hadj-Aissa - DGF Algérie

ALMOST 300 WETLANDS OF INTERNATIONAL IMPORTANCE ACROSS THE 10 COUNTRIES

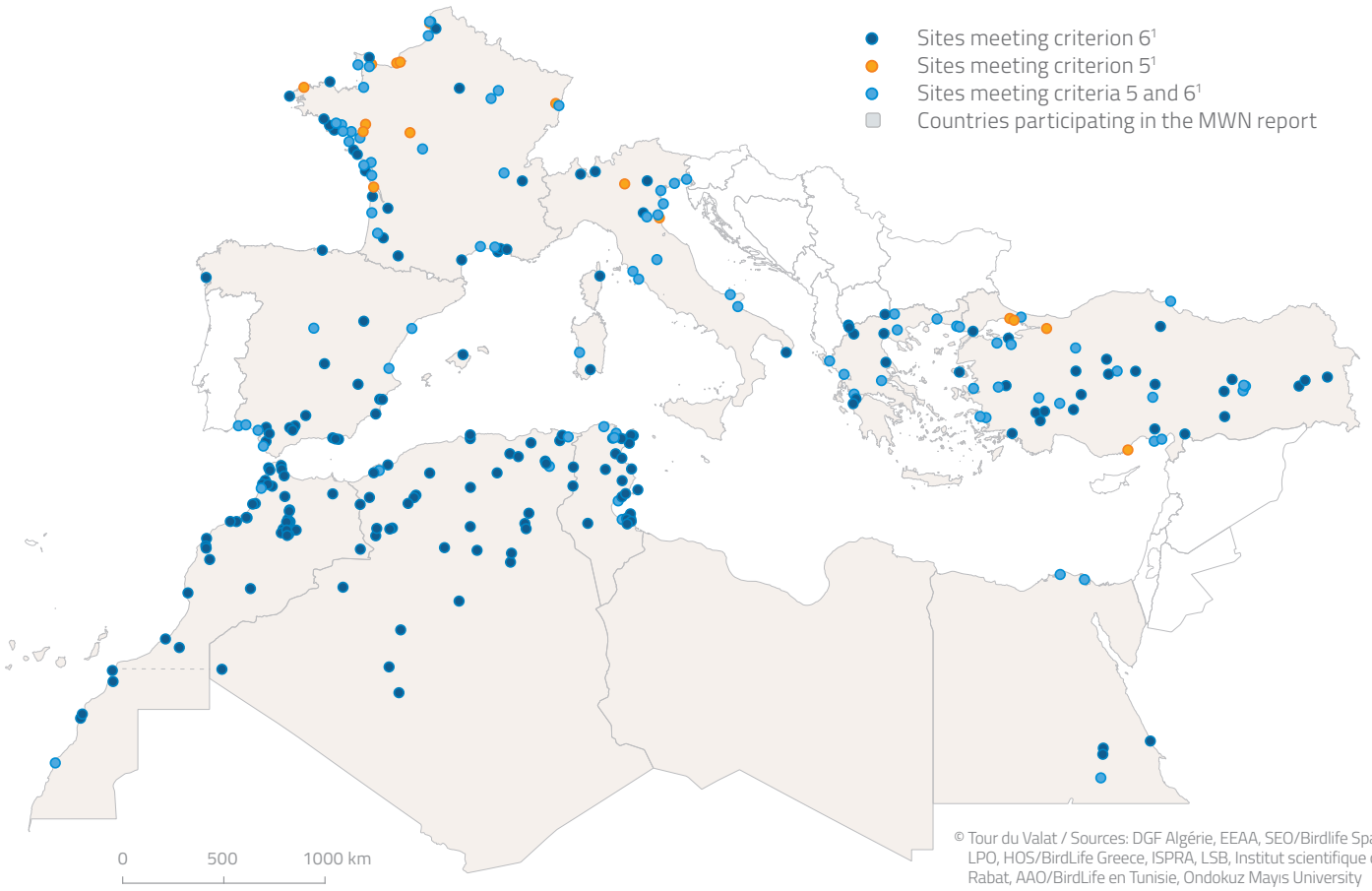
Across the 10 countries that participated in this report, 280 wetlands are of potential international importance; this is based on average waterbird numbers from 2014-2018 (2014-2016 for Spain). These wetlands meet either Ramsar Criterion 5 or 6** or both.**

Libya is the only country showing no apparent sites of international importance, this is due to the lack of recent counts on its major wetlands, which is linked to the highly unstable political situation experienced there since 2011. Of the 280 sites of international importance, less than half (103) are designated as Ramsar sites. Given the important role that Ramsar sites play for migratory birds during their wintering phase (Gaget et al., 2020a), it would seem necessary to extend the network of Ramsar sites to ensure at least their regular monitoring and, for certain countries, to ensure their protection and conservation. This table shows the number of sites meeting criterion 5** per country, and the names and numbers of species meeting criterion 6** for each country.

COUNTRIES IN THE COUNTING NETWORK PARTICIPATING IN THE REPORT*	Algeria	Egypt	Spain	France	Greece	Italy	Morocco	Tunisia	Turkey
Number of sites meeting criterion 5 per country**	**3**	**4**	**8**	**29**	**8**	**14**	**2**	**5**	**23**
Number of sites meeting criterion 6 per country**	**9**	**8**	**32**	**31**	**18**	**25**	**23**	**13**	**22**
LIST OF SPECIES MEETING CRITERION 6**									
Brant Goose				13					
Pale-bellied brant				1					
Greylag Goose			1			7			
White-fronted Goose						3			
Lesser White-fronted Goose						2			
Mallard			3	1	1	2			
Northern Pintail			1	4		1			
Eurasian Wigeon	1		2	1	4	4	1	1	3
Gadwall			2	4	1	1			1
Northern Shoveler			3	8	1	1	1	1	
Red-crested Pochard			3	2		1			1
Common Pochard				7					5
Ferruginous Duck						1	3		1
Tufted Duck				1					1
White-headed Duck	11		18				6	9	1
Common Teal	6		2	4	2		1		3
Marbled Duck			1				8	2	
Green-winged Teal						2			
Ruddy Shelduck	20						7		17
Common Shelduck	4		1	6		3	1	4	
Smew									1
Red-breasted Merganser				1		1			
Goosander					1	3			
Mute Swan					2	1			1
Tundra Swan					2				5
Whooper Swan					1				2
Red-knobbed Coot							26		
Common Coot			1	1	1	1			6
European Shag									1
Great Cormorant	1					1			
Pygmy Cormorant					1	2			
Purple Swamphen			4						
Black-necked Grebe				1		1			

COUNTRIES IN THE COUNTING NETWORK PARTICIPATING IN THE REPORT*	Algeria	Egypt	Spain	France	Greece	Italy	Morocco	Tunisia	Turkey
LIST OF SPECIES MEETING CRITERION 6**									
Great Crested Grebe		1			2				1
Common Loon				1					
Greater Flamingo	7		7	4	6	7		10	5
Black Stork			2						
Common Crane	1		1	7					1
Dalmatian Pelican					10				9
Eurasian Spoonbill			5	1	2	1		3	
Glossy Ibis		1	4				1		
Northern Bald Ibis							1		
Western Cattle Egret	2							4	
Little Egret		1	3	1					
Great White Egret			1						
Black-crowned Night-heron			2						
Squacco Heron		1							
Black-winged Stilt			1					1	
Pied Avocet			3	6	5	3	2		1
Kentish Plover			2		1		2	1	
Common Ringed Plover			1	5			2		
Grey Plover			1	5		1	2	1	
Black-tailed Godwit			3	7					
Bar-tailed Godwit				1			1		
Red Knot				3			1		
Sanderling				1			3		
Dunlin			3	6	1	2	1		
Little Stint			1				2		
Ruddy Turnstone				4					
Caspian Tern		1	1				1	2	
Whiskered Tern		1							
Slender-billed Gull		1						2	
Armenian Gull		1							12
Black-headed Gull									1
Lesser Black-backed Gull			4				2		
Yellow-legged Gull			1						
Mediterranean Gull				1		3			
Sooty Gull		1							
Great Black-backed Gull				1					
Audouin's Gull							5		

TABLE OF NUMBER OF SITES MEETING CRITERION 5 BY COUNTRY**
and list of species meeting criterion 6** by country



© Tour du Valat / Sources: DGF Algérie, EEAA, SEO/Birdlife Spain, LPO, HOS/BirdLife Greece, ISPRA, LSB, Institut scientifique de Rabat, AAO/BirdLife en Tunisie, Ondokuz Mayıs University

MAP OF SITES MEETING RAMSAR CRITERIA 5 AND 6**

in the countries involved in this report and based on average data from 2014-2018

* Libya is not represented in the table since none of its sites meet Ramsar criteria 5 and/or 6, this is due to the unstable security situation in the country which has not allowed regular monitoring since 2011.

** Criterion 5: A wetland should be considered internationally important if it usually supports 20,000 or more waterbirds.
Criterion 6: A wetland should be considered internationally important if it usually supports 1% of individuals in a population of a species or subspecies of waterbird.

[1] Based on average numbers for each species from 2014 to 2018 (2016-2018 for Spain).

Glossy Ibis and Little Egrets in flight
© G. Demirer - ORC

IN THE FACE OF GLOBAL CHANGE, GENERALIST SPECIES* HAVE THE ADVANTAGE

Waterbird census data are also used to study bird communities in response to global change. In the following study, carried out by the Mediterranean Wetlands Observatory, 132 wintering waterbird species (36 million individuals) were analysed using data collected from 22 Mediterranean countries during the IWC (Gaget et al., 2020b).

Climate change and habitat loss or degradation affect biodiversity; however, the cumulative effect is less known. Global warming leads to a shift in species distribution towards the poles, which has been well documented in birds. It impacts the community composition of species, i.e. the composition of species on a site.

However, although this so-called "thermal" adjustment of communities is measured and observed using the CTI index *(see box)*, its rate is slower than that of temperature warming. As a result, there is a discrepancy between the climatic conditions and the average conditions required by the species present in the community.

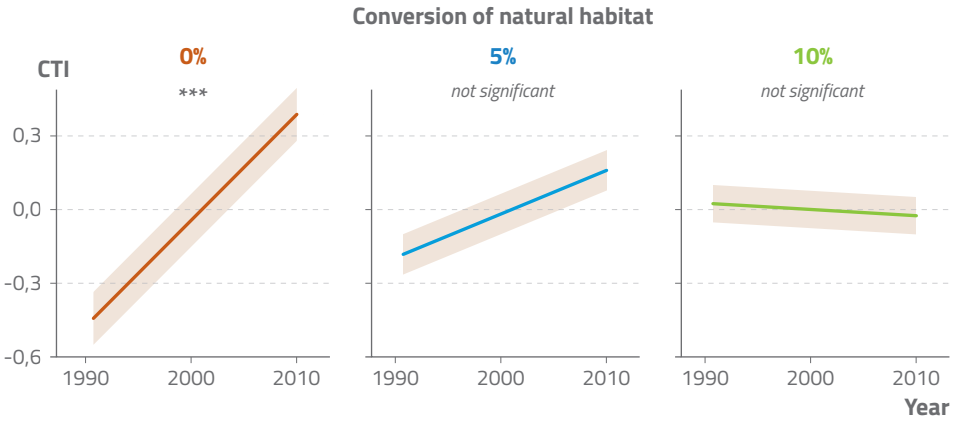
The Community Temperature Index (CTI) measures the average composition of a bird community based on the climatic niches of the different species. For example, a species living in Europe is more adapted to lower temperatures than a species living in Africa.

In response to global warming at a given site or in a given country, an increase in CTI is expected as a result of the relative increase in abundance of warm-adapted species compared to cold-adapted species.

Climate change is not the only factor affecting species and causing changes in community composition; loss and degradation of natural habitats are also major threats to ecosystems. However, just like for climatic conditions, each species has its specific adaptations for habitat. These can either be restrictive, for the so-called 'specialist' species, or broad, for the so-called generalist* species. In the face of global change, generalist species have an advantage because they can adapt to varied conditions more easily than specialist species. On a global scale, we are now seeing a decline in the number of specialist species, whereas generalist species are on the rise.

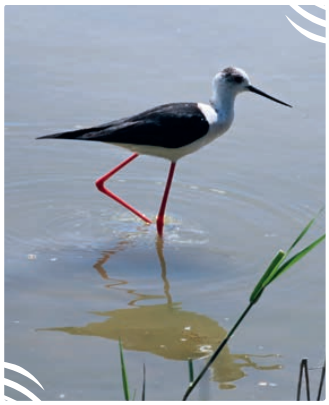
Furthermore, the results of the study show that, in response to an average temperature increase of 0.5°C over 20 years, the thermal composition of bird communities changes rapidly at sites where natural environments have been conserved, with an increase in abundance of thermophilic species. On the other hand, when the transformation of natural habitats into artificial, agricultural or urban environments is greater than 5% over 15 years, the reorganisation of bird communities in response to global warming is no longer observed *(see figure below)*.

In contrast, under the combined effect of climate and habitat change, it is the generalist, and not necessarily the thermophilic species, which are increasing. In both the southern and northern Mediterranean, the accumulation of these two pressures is responsible for both a delay in thermal adjustment and a loss of diversity in wintering waterbird communities.



COMMUNITY TEMPERATURE INDEX (CTI) TREND OVER TIME
as a function of the proportion of natural habitat conversion at the study sites

EXAMPLES OF SPECIES BENEFITING from the increase in winter T° in the Mediterranean	**EXAMPLES OF SPECIES DISADVANTAGED** by the increase in winter T° in the Mediterranean	**EXAMPLES OF SPECIES THAT BENEFIT** from warmer winter T° in the Mediterranean and changing habitats	**EXAMPLES OF SPECIES DISADVANTAGED** by the warming of winter T° in the Mediterranean and changing habitats
Western Swamphen *(Porphyrio porphyrio)*	**Mallard** *(Anas platyrhynchos)*	**Northern Shoveler** *(Spatula clypeata)*	**Little Grebe** *(Tachybaptus ruficollis)*
Eurasian Spoonbill *(Platalea leucorodia)*	**Greylag Goose** *(Anser anser)*	**Great Cormorant** *(Phalacrocorax carbo)*	**Grey Plover** *(Pluvialis squatarola)*
Little Stint *(Calidris minuta)*	**Common Goldeneye** *(Bucephala clangula)*	**Eurasian Coot** *(Fulica atra)*	**Slender-billed Gull** *(Larus genei)*
Green Sandpiper *(Tringa ochropus)*			
Black-winged Stilt *(Himantopus himantopus)*			



Black-winged Stilt
© A. Dindeleux - Tour du Valat

Eurasian Coot - © P. Perantonakis/HOS-BirdLife Greece

For instance, for many species, an increase in sedentary numbers and a reduction in migration distance are probably underway as a result of global warming, but this adaptive response is being altered by the destruction and modification of natural wetlands. As natural wetlands in the Mediterranean basin have declined by 48% over the last 40 years (-35% globally, Global Outlook 2018 figures), there is a need to protect natural habitats to facilitate the adaptation of birds to global warming.

Source: Elie Gaget, Tour du Valat (France) and IIASA (Autriche) - Mediterranean Wetlands Observatory

***generalist species:** A generalist species thrives in a wide range of environmental conditions and can make use of a wide variety of resources (e.g. an omnivorous animal with a diverse diet, or an opportunistic animal that adapts its diet to immediately available resources).

Great Cormorant
© B. Molina - SEO/BirdLife Spain

MWN ACTIVELY COLLABORATES WITH TWO OTHER NETWORKS INVOLVED IN WETLAND CONSERVATION IN THE MEDITERRANEAN

THE MEDITERRANEAN WETLANDS OBSERVATORY

The Mediterranean Wetlands Observatory (MWO), coordinated by the Tour du Valat, was created in 2008 to strengthen the monitoring system of MedWet, the Mediterranean Wetlands Initiative of the Ramsar Convention. The MWO fills knowledge gaps on the status and trends of wetland ecosystems in the region and raises awareness of their many values. Its ultimate goal is to improve the conservation and sustainable use of wetlands by informing as many people as possible, especially decision-makers and the general public. The MWO publishes scientific papers and reports which measure progress towards meeting international and national commitments to wetland conservation and propose solutions to address issues. The second pan-Mediterranean report, Mediterranean Wetlands - Issues and Perspectives 2 (MWO2) provides an update on the situation of Mediterranean wetlands since 2012. It was published for the 13th meeting of the Conference of the Contracting Parties to the Ramsar Convention (COP13, Dubai, October 2018).

THE MEDITERRANEAN WETLANDS ALLIANCE

The Mediterranean Wetlands Alliance, formally established in January 2017 and currently holding 27 members from 15 countries, aspires to collectively increase the recognition of the importance of wetlands in Mediterranean society, particularly in national, regional and international policy, through the promotion of their conservation and sustainable use.

Its objectives:

- **To exchange and share knowledge within the Alliance** in a multi-directional way, on information sources, experiences, best practices, exemplary site management, etc;
- **To strengthen the capacities of civil society in the broadest sense**, through training programmes and by supporting conservation projects, to increase its effectiveness in wetland management and conservation efforts.

Common Pochard
© Ö. Furtun - ORC

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Counting waterbirds in Turkey

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Greater Flamingos - © D. Hadj-Aissa - DGF Algérie

Mediterranean Waterbirds
Oiseaux d'eau Méditerranée
الطيور المائية بمنطقة البحر المتوسط

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