



INTERNATIONAL WATERBIRD CENSUS

FRANCE · 2019-2023



ACKNOWLEDGEMENTS AND LIST OF PARTICIPANTS

The IWC is carried out in France thanks to the participation of local coordinators from the following ornithological associations and organisations:

ANA - Conservatoire d'Espaces Naturels d'Ariège, Bretagne Vivante, Charente Nature, COGard - Centre Ornithologique du Gard, Conservatoire d'espaces naturels Corse, Conservatoire d'Espaces Naturels Occitanie, GEOCA & Bretagne-Vivante, GNLA - Groupe Naturaliste de Loire-Atlantique, GODS - Groupe Ornithologique des Deux-Sèvres, GON - Groupe ornithologique et naturaliste (agrément régional Hauts-de-France), GONm - Groupe Ornithologique Normand, GOR - Groupe Ornithologique du Roussillon, Indre Nature, Loiret Nature Environnement, LPO Alsace, LPO Anjou, LPO Aude, LPO Auvergne-Rhône-Alpes, LPO Bourgogne-Franche-Comté, LPO Centre-Val-de-Loire & Eure-et-Loir Nature, LPO Champagne-Ardenne, LPO Coordination Grand Est, LPO DT Aquitaine, LPO DT Île-de-France, LPO DT Poitou-Charentes, LPO Limousin, LPO Nièvre, LPO Occitanie - DT Lot, LPO Occitanie - DT Lozère, LPO Occitanie DT du Tarn, LPO Occitanie DT Gers, LPO Provence-Alpes-Côte d'Azur, LPO Sarthe, LPO Touraine, LPO Vendée, Mayenne Nature Environnement, Nature 18, Nature En Occitanie, Picardie Nature, Société de Sciences Naturelles de Tarn-et-Garonne & Sologne Nature Environnement.

Every year in mid-January, nearly 2,500 observers are mobilised to count waterbirds in the main wetlands of metropolitan France. Unfortunately, due to lack of space, we cannot list them all, but we would like to thank them for their long-standing commitment.



General report
(2009-2018)



France report
(2009-2018)

Bibliographic reference: G. Quaintenne. 2025. *International waterbird census. France report (2019-2023)*. Medwaterbirds Network, Tour du Valat, 12 p.

Cover image: Northern Pintail, France © E. Barbelette / **Photo p.2:** Dunlin, Sanderling, & Ruddy Turnstone, France © F. Cahez / **Cartography:** Marta Lago, Khalil Baddour
Translation and proofreading: Charles La Via / **With the contribution of** Marta Lago, Khalil Baddour, Laura Dami / **Graphic design and layout:** Atelier Guillaume Baldini

MOBILIZED NATIONAL OBSERVERS

NUMBER OF OBSERVERS

NEARLY
2,500 OBSERVERS INVOLVED



Mainly from a **volunteer** and **professional** network of birdwatchers and protected area managers – are involved each year in IWC counts. The IWC in France relies mainly on a network of some 70 local coordinators deployed at the Department and Regional levels.

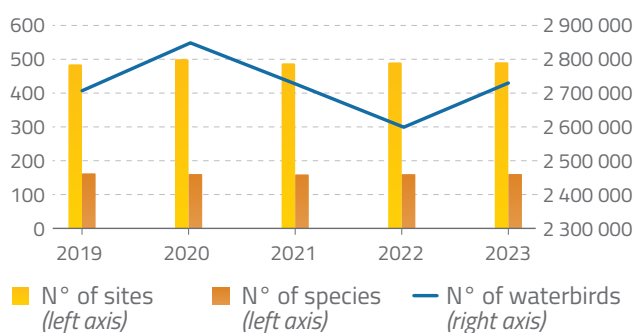
MAXIMUM NUMBER OF SPECIES OBSERVED

145

SPECIES OBSERVED IN FRANCE IN 2022
(DURING THE 2019-2023 IWC)



EVOLUTION IN THE NUMBER OF SITES VISITED, COUNTED SPECIES AND WATERBIRDS (2019-2023)

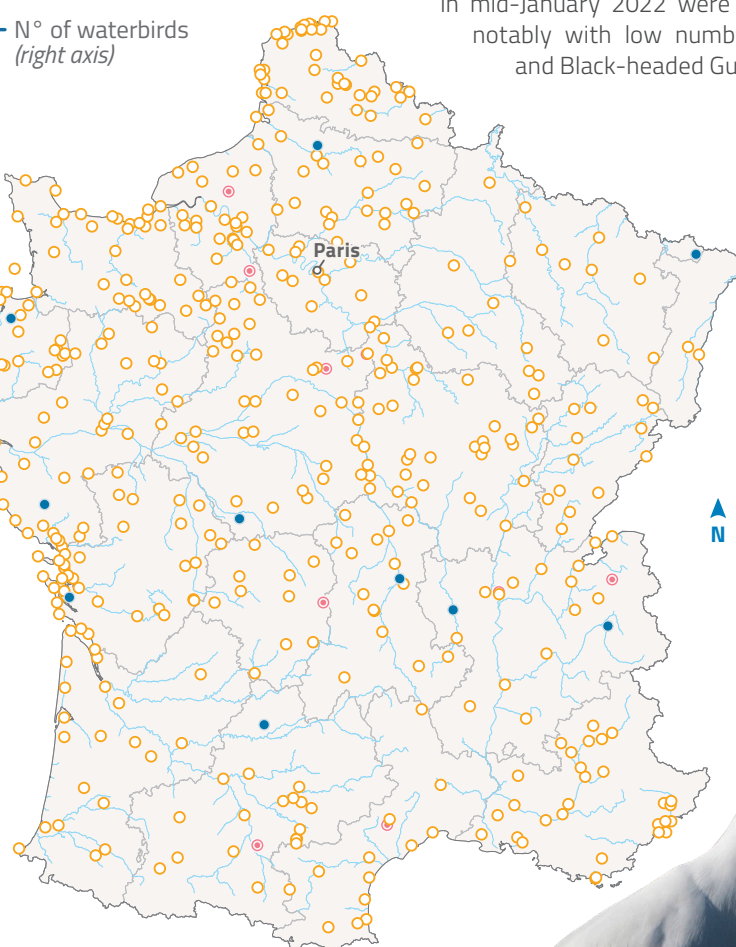


From 2009 to 2023, an average of 490 wetlands were counted per year, representing 94% coverage of active functional sites. On average, 2,720,423 waterbirds are counted each year, with a peak recorded in mid-January 2020 (including large numbers of Dunlin, Black-headed Gull, and Northern Lapwing—three species among the top five recorded in mid-January in France, along with Mallard and Common Coot). Conversely, the totals in mid-January 2022 were the lowest, notably with low numbers of Coot and Black-headed Gull.

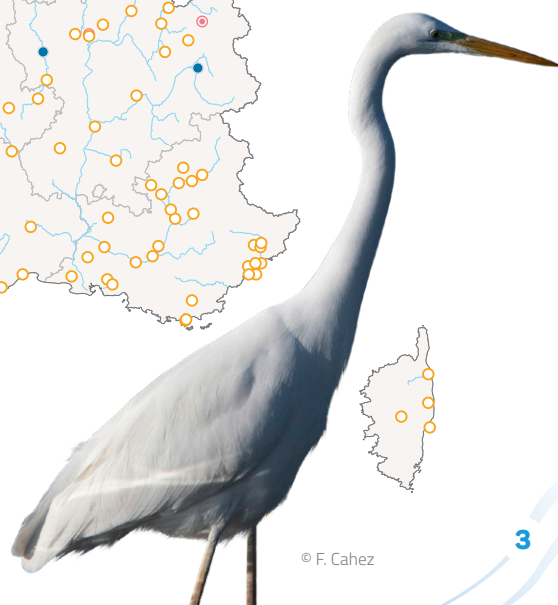
WETLANDS COUNTED in France (2009-2023)

- Regularly visited sites (at least 7 times during 2009-2023)
- Newly visited sites (visited only during 2019-2023)
- ⊙ Earlier sites (visited only during 2009-2018)
- Rivers

The IWC covers some **520 active functional sites**, including coastal and inland wetlands. Given the good coverage of the main wetlands, few new sites were created over the recent period.



© LPO, Tour du Valat
sources: LPO, QSM, HydroSHEDS,
UN-FAO and EuroGeographics



MAIN TRENDS (2019-2023) IN WATERBIRD POPULATIONS



DECLINING SPECIES, DURING THE ASSESSMENT PERIOD (2019-2023)

SPECIES		VALUES			
English name	Scientific name	Average nb. of birds	Nb. sites	Magn.*	±ES**
Ruddy Duck	<i>Oxyura jamaicensis</i>	51	10	-0.59	0.29
Red-necked Grebe	<i>Podiceps grisegena</i>	13	43	-0.22	0.11
Common Goldeneye	<i>Bucephala clangula</i>	933	91	-0.21	0.05
Black-necked Grebe	<i>Podiceps nigricollis</i>	6 296	127	-0.21	0.04

SPECIES		VALUES			
English name	Scientific name	Average nb. of birds	Nb. sites	Magn.*	±ES**
Eurasian Wigeon	<i>Mareca penelope</i>	40 414	327	-0.07	0.03
Mallard	<i>Anas platyrhynchos</i>	239 199	508	-0.05	0.01
Grey Heron	<i>Ardea cinerea</i>	11 765	500	-0.03	0.01
Velvet Scoter	<i>Melanitta fusca</i>	281	63	-0.003	0.0001

* Magn.: Magnitude / ** ±SE: Standard error. The trends shown in the tables are at least significant at an alpha risk of 5%.

Among the approximately 70 species analysed, the mid-January counts of 8 species show significant declines from 2019 to 2023. The strongest decline was observed for the Ruddy Duck, which is good news because it is a non-native species. The decline of certain species at the southern edge of their range (Red-necked Grebe, Common Goldeneye, Velvet Scoter) can likely be explained by contractions and/or shifts in their distribution areas. The Mallard also appears to be declining, consistent with trends observed in the two populations wintering in France. It should also be noted that the Grey Heron is declining, as reported in the latest survey of colonial herons in France (Marion 2023).



Ruddy Duck © Rhododendrites

HIGHLIGHTS

French and European legislation, as well as international agreements, prohibit the deliberate introduction of non-native waterbird species into the environment. All appropriate measures are taken to prevent the unintentional release of such species when it harms the conservation status of wild flora and fauna. Most problems with non-native waterbirds likely arise from hybridization with closely related species that were previously separated by geographical barriers.

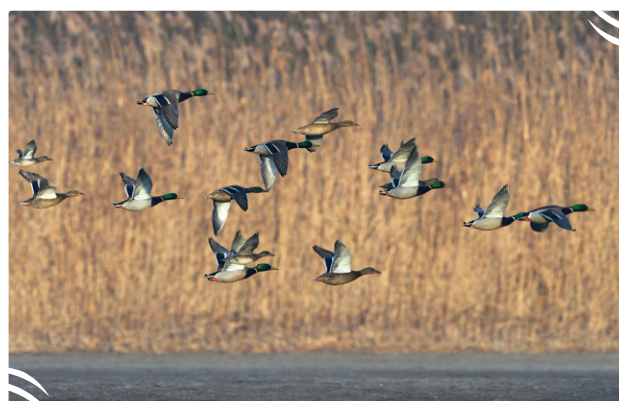
Within the AEWA Agreement area, 32 regularly breeding introduced waterbird species have been identified in 2007 (Banks *et al.* 2011). The development and implementation of robust legislation and control mechanisms is a priority for the AEWA, which focuses on strong collaborative actions between countries for the effective management of introduced populations such as the Ruddy Duck.

FOCUS

Among the 5 species declining in mid-January, the Ruddy Duck shows the steepest decline over the period. From a peak of 272 individuals in 2006, only 17 individuals were counted in mid-January 2024. These results illustrate the success of the LIFE "Oxyura" program (coord. OFB) dedicated to the eradication of this non-native species, which threatens the conservation of the endangered White-headed Duck.

The Red-necked Grebe, at the southern edge of its range, has always been rare in France, but its numbers are in real decline, with only 3 individuals reported annually in recent years compared to 40 annually in the 1990s. According to declines reported in most northern and northeastern European countries, its range is likely contracting, possibly also shifting its wintering distribution northwards due to milder winters.

The recent decline of the Mallard in France coincides with those reported for the two populations thought to be present in the country. In the Netherlands, which hosts the largest breeding concentration of the northwestern European population, a decrease in duckling survival rates has been suggested to explain the population decline (Wiegers *et al.* 2022).



Mallards soaring above the wetlands © F. Cahez



INCREASING SPECIES, DURING THE ASSESSMENT PERIOD (2019-2023)

SPECIES		VALUES			
English name	Scientific name	Average nb. of birds	Nb. sites	Magn.*	±ES**
Glossy Ibis	<i>Plegadis falcinellus</i>	3 155	44	0.9	0.23
Ruddy Shelduck	<i>Tadorna ferruginea</i>	228	40	0.39	0.18
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	452	47	0.20	0.08
Pied Avocet	<i>Recurvirostra avosetta</i>	20 609	56	0.2	0.05
Greylag Goose	<i>Anser anser</i>	13 798	184	0.17	0.06
Greater Flamingo	<i>Phoenicopterus roseus</i>	48 088	26	0.16	0.06

SPECIES		VALUES			
English name	Scientific name	Average nb. of birds	Nb. sites	Magn.*	±ES**
Canada Goose	<i>Branta canadensis</i>	8 283	159	0.15	0.04
Northern Pintail	<i>Anas acuta</i>	16 826	215	0.14	0.04
Red-crested Pochard	<i>Netta rufina</i>	6 955	129	0.14	0.07
Common Teal	<i>Anas crecca</i>	141 454	415	0.13	0.01
Northern Shoveler	<i>Spatula clypeata</i>	43 854	327	0.10	0.02
Eurasian Curlew	<i>Numenius arquata</i>	28 562	145	0.07	0.03

* Magn.: Magnitude / ** ±SE: Standard error. The trends shown in the tables are at least significant at an alpha risk of 5%.

Among the 70 species analysed, 12 species showed a significant increase over the 2019-2023 period. Some other species showed an increase, but this was considered not relevant because the IWC is not an appropriate monitoring tool for assessing their trends (i.e. marine or pelagic species and cryptic species such as snipes). These included large wading birds (Ibis, Flamingo and Black-crowned Night-heron), but also some waders (Pied Avocet and Eurasian Curlew), non-native species (Ruddy Shelduck, Canada Goose), and also some Anatidae (Northern Pintail, Red-crested Pochard, Common Teal and Northern Shoveler).

GLOSSY IBIS

With its return to the western Mediterranean basin, the **Glossy Ibis** is now well established in France, and its population is growing exponentially (Champagnon et al. 2019). It is the Doñana population, and to a lesser extent that of the Ebro Delta, that is believed to be driving the species' geographic expansion in Western Europe and France. Likely linked to the dispersal of individuals following the 2004 drought in Doñana, the species was first recorded during the mid-January census in 2005 (5 individuals at 2 Atlantic sites).

Since then, numbers have continued to grow, with nearly 5,000 individuals reported in 2023 across 23 sites along the Mediterranean and Atlantic coasts. With 3,715 individuals recorded in mid-January 2023, the Camargue has reached the threshold for international population importance — a status it has held since 2018.

HIGHLIGHTS

The wide dispersal of the **Glossy Ibis** in response to extreme adverse events such as droughts is, in itself, a key aspect of how species respond to climate change (Santoro et al. 2013). Some waterbird populations are showing significant shifts in their distribution ranges as a result of climate change. Protected areas are effective in mitigating certain impacts of global warming by preventing habitat loss and by preserving or restoring suitable habitats.

While establishing a network of protected wetlands is essential, it is even more important to ensure that proper conservation management is implemented within them (Wauchope et al. 2022). More specifically, habitat-based management — particularly for wetlands — has proven to be more effective than species-targeted interventions in helping waterbird communities to adjust to climate change (see recent study by Jonas et al. 2025).

Glossy Ibis
© F. Cahez



43 WETLANDS MAY BE DESIGNATED AS AREAS OF INTERNATIONAL IMPORTANCE

SITES OF THE WETLANDS COUNTING NATIONAL NETWORK		Designated Ramsar Site	> 20 000 waterbirds	Mute Swan	Dark-bellied Brent Goose	Pale-bellied Brent Goose	Common Shelduck	Red-crested Pochard	Common Pochard	Northern Shoveler	Gadwall	Eurasian Wigeon	Mallard	Northern Pintail	Common Teal	Greater Flamingo	Eurasian Spoonbill	Glossy Ibis	Common Crane	Cattle Egret	Little Egret	Pied Avocet	Grey Plover	Common Ringed Plover	Bar-tailed Godwit	Black-tailed Godwit	Ruddy Turnstone	Red Knot	Sanderling	Dunlin	Great Black-backed Gull	Mediterranean Gull
REGIONS OF FRANCE																																
Top 13 IWC Sites																																
Number of sites		25	28	1	12	1	7	2	5	13	5	1	2	8	5	2	1	1	9	1	1	8	5	2	1	6	2	5	1	7	1	1
HAUTS-DE-FRANCE																																
Littoral Picard		(R)	o				o			o				o																		
NORMANDIE																																
Les Marais du Cotentin et du Bessin		(R)	o							o																						
GRAND EST																																
Lac du Der-Chantecoq (51/52)		(R)	o						o		o			o	o				o													
Lacs : Orient, Amance et Temple-Auzon		(R)	o						o						o																	
BRETAGNE																																
Baie du Mont-Saint-Michel		(R)	o		o		o																o					o		o		
Golfe du Morbihan		(R)	o		o		o			o				o								o				o				o		
PAYS DE LA LOIRE																																
Presqu'île Guérandaise dont Traicts du Croisic		(R)	o		o		o			o											o	o				o						
Lac de Grandlieu		(R)	o						o	o	o																					
Baie de Bourgneuf et Noirmoutier		(R)	o		o																	o	o		o	o		o		o		
Baie de l'Aiguillon et Pointe d'Arçay		(R)	o		o		o			o				o								o	o			o		o		o		
NOUVELLE-AQUITAINE																																
Réserve Naturelle de Moëze (Charente-Seudre)			o		o		o			o				o								o	o		o		o		o			
Bassin d'Arcachon		(R)	o		o																	o	o	o			o			o		
PROVENCE-ALPES-CÔTE D'AZUR																																
Camargue		(R)	o	o			o	o		o	o	o	o		o	o	o	o	o			o								o		

WETLANDS OF INTERNATIONAL IMPORTANCE FOR WATERBIRDS

Identification based on mid-January (2019-2023) count data for Ramsar Criteria 5 and 6. Only the first 13 Ramsar sites are listed below. Empty cells in the "Ramsar site" column identify sites not included in the Ramsar network.

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

* To define the notion of "regularly," we have applied the following rule (currently under review by COP15 RAMSAR, 2025): A wetland is considered to regularly support a population of waterbirds of a given size if either of the following conditions is met:

- The average of the annual maxima recorded over a period of at least five years reaches or exceeds the required threshold; or
- The required number of birds is recorded in at least two-thirds of the years for which adequate data are available, provided that data are available for at least three years in total.

FACT

Between 2019 and 2023, **43 sites** in France met Ramsar criteria for international importance for waterbirds: 28 sites met Criterion 5 ($\geq 20,000$ waterbirds), and 41 met Criterion 6 ($\geq 1\%$ of a population of a species or subspecies). The Camargue remains the top IWC site, with around 200,000 birds counted annually—mainly Anatidae (65%)—and holds international importance for 14 populations, including the **Common Teal**, **Eurasian Wigeon**, **Mute Swan**, **Greater Flamingo**, **Glossy Ibis**, and recently, **Common Crane**. Its vast area and access challenges require both ground and aerial

surveys. Next are the Pertuis Charentais, with the Moëze-Oléron and Aiguillon Bays—France's second and fourth top IWC sites. These coastal sites are crucial wintering grounds for waders (**Red Knot**, **Dunlin**, **Black-tailed Godwit**) thanks to vast intertidal mudflats and a strong reserve network. They also host significant numbers of **Shelducks** and **Dark-bellied Brent Geese**. The third IWC site is Lac du Der, an inland reservoir created in 1974 to regulate the Marne River. Surrounded by ponds, gravel pits, and agricultural land, it supports several important duck populations and is a major site for **Common Crane** migration and wintering.



Aerial survey in Camargue ©J.B. Mouronval

HIGHLIGHTS

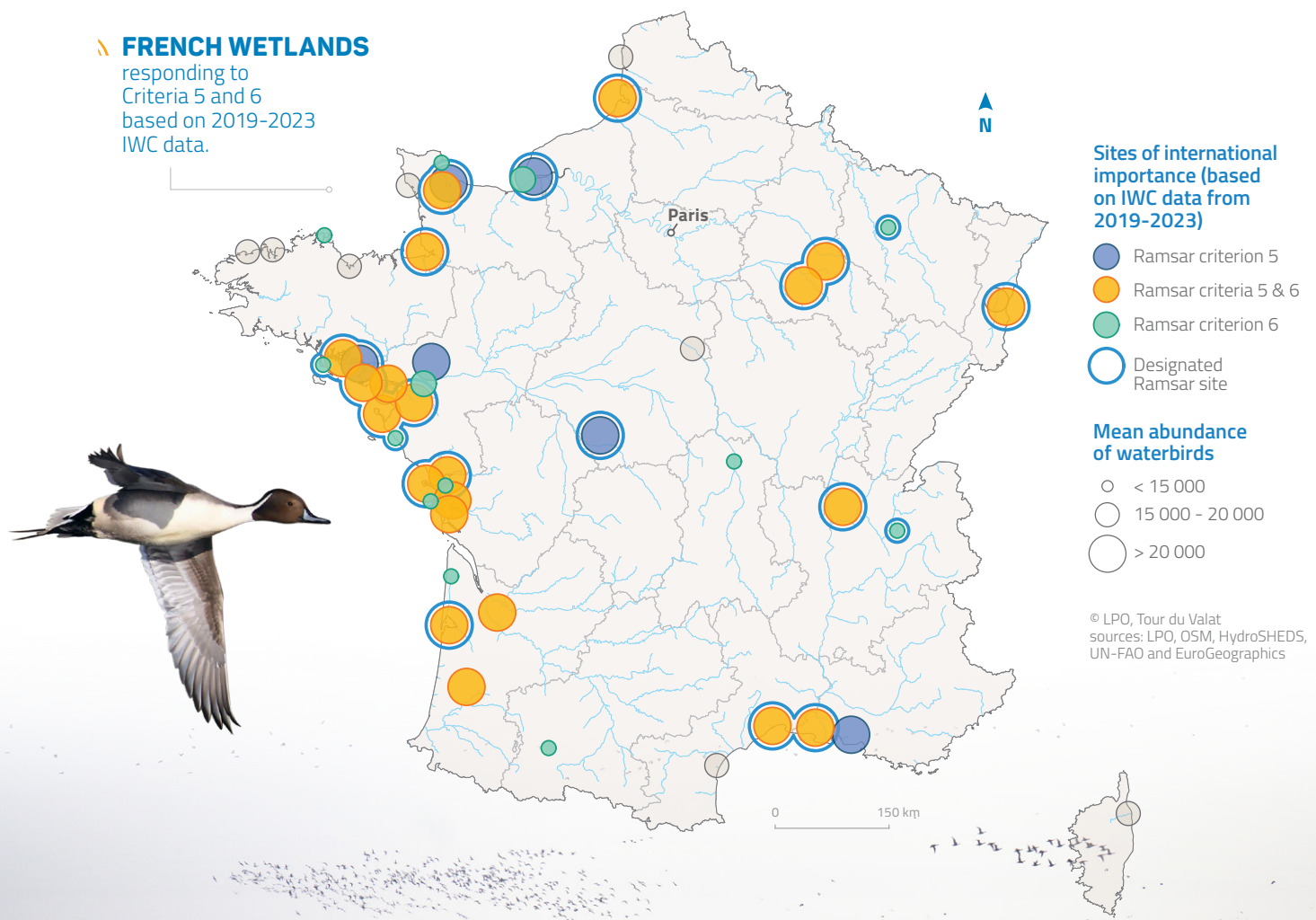
Most top IWC sites benefit from Ramsar designation, but some do not. Yet, their classification as National Nature Reserves—offering one of the highest protection levels in France—often provides stronger, targeted management for wetlands habitats and waterbirds.

SUGGESTED ACTIONS

IWC data are essential for Ramsar site designation (Gaget *et al.* 2020) but reflect only wintering distributions. Network analyses (Beal *et al.* 2025) revealed 7 top connectivity sites for **Black-tailed Godwits** in France, but only 4 overlap with top IWC sites, and 3 lack Ramsar designation. At the East-Atlantic flyway scale, 20% of 1,058 sites lack protection, and only 44% of birds are covered. Individual tracking and modern tools can better identify priority sites and support updates for applying Ramsar Criteria (Navedo & Piersma 2023).

FRENCH WETLANDS

responding to
Criteria 5 and 6
based on 2019-2023
IWC data.



While most overwintering waterbirds and internationally important wetlands are along the **North Sea, English Channel, Bay of Biscay, and Mediterranean coast** (28 sites), inland wetlands also play a key role (18 sites) in France, including major areas like the **Rhine Valley, Champagne Region**, and the lakes and ponds of **Brenne and Dombes**.

Mont-Saint-Michel Bay
©P.M. Denieul

FOCUS ON A COUNTRY'S FLAGSHIP SPECIES: THE DUNLIN (*CALIDRIS ALPINA*)

The Dunlin (*Calidris alpina*) is the most abundant shorebird using coastal habitats along the East Atlantic Flyway. With an average of 315,600 individuals counted across 100 sites between 2019 and 2023, the Dunlin is also the species contributing the most to the IWC in France. Seven sites in France meet the criteria for international importance for the “alpina, NE Europe and NW Siberia/W Europe and NW Africa” population, ranging from northern Brittany to the southwestern Atlantic coast and the Camargue.



Dunlin ©F. Cahez

Overwintering Dunlins in Western Europe, Morocco, and the western Mediterranean mostly belong to the nominate subspecies *Calidris alpina alpina*, which breeds in northern Scandinavia and Russia as far east as the Taimyr Peninsula. This population is estimated at 1.3–1.4 million individuals.

With around 300,000 individuals counted each January, the Dunlin is the most numerous shorebird in France during mid-winter counts. France contributes about 30% of the IWC numbers for this population, alongside the UK (~300,000) and the Netherlands (~250,000), which form the core of its winter range (Wetlands International 2025).

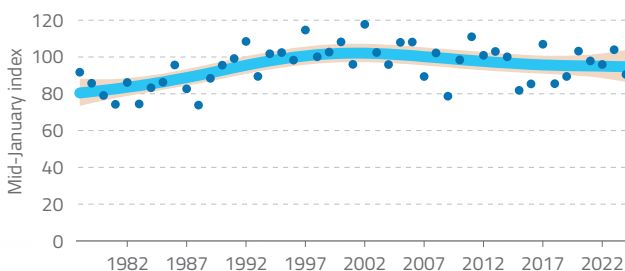
Over the 2019–2023 period, seven French sites met international importance thresholds, led by Moëze–Oléron Charente-Seudre (54, 510 ind.), Arcachon Bay (27,977), and Mont-Saint-Michel Bay (26,732). The Atlantic coast hosts nearly 70% of France's wintering population, followed by the English Channel–North Sea (24%) and the Mediterranean (8%).

Nationally, wintering numbers rose slightly until the 2000s and have since stabilized above 300,000. On the Channel–North Sea coast, numbers fell from 100–120,000 in the 1980s–2000s to around 70,000 today. On the Atlantic coast, numbers increased until 2000 and then stabilized at ~200,000. Mediterranean numbers have risen significantly in recent years, nearing 25,000.

The *alpina* population has increased by 0.6% per year on average since 1976, whereas *schinzii* populations, which winter further south, mainly in West Africa, have all been in decline (van Roomen *et al.* 2025). In Europe, declines are mainly reported in the British Isles, likely due to a winter range shift eastward as milder winters make continental sites more favourable—as evidenced by increases in the Netherlands (Maclean *et al.* 2008).

Globally, the Dunlin was recently uplisted to Near Threatened on the IUCN Red List due to moderately rapid declines in some populations, especially in the Americas (e.g. Smith *et al.* 2023), though the causes remain unclear. In Europe, it remains classified as Least Concern due to its broad range, large population size, and relatively stable trends.

ABUNDANCE INDEX OF DUNLIN IN FRANCE (International Waterbird Census 1978–2023)





Great Egret
& Grey Heron
© F. Cahez

HOW MANY ARE THERE?

IMPROVING POPULATION ESTIMATES OF WINTERING WATERBIRDS

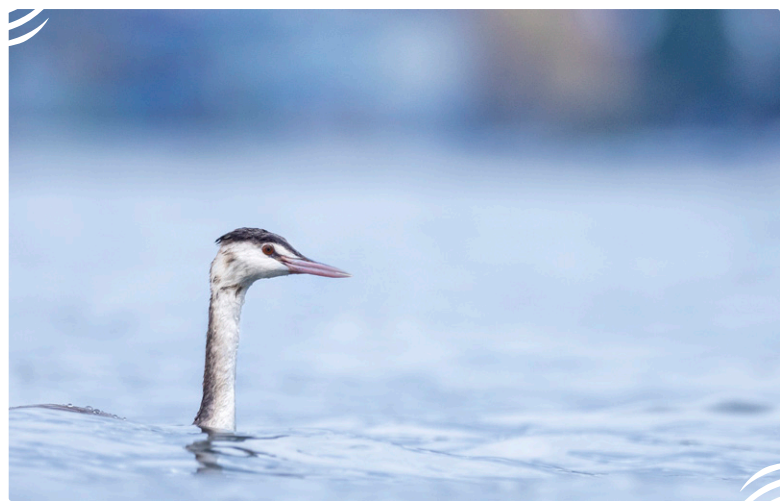
Accurate national and flyway-level estimates of wintering waterbird populations are critical for effective conservation and management strategies. Under Article 12 of the EU Birds Directive, each Member State must report every six years population size estimates of overwintering species. These data inform the European Red List of Birds (BirdLife International 2021) and help determine the conservation status of migratory waterbirds across the AEWA region (Nagy & Langendoen 2021).

Although France's mid-January counts cover a wide range of wetlands, reliable population estimates are lacking for certain species. Yet, methods do exist to improve this situation.

As we know, not all birds can be directly counted. While the mid-January waterbird census provides reasonably accurate minimum estimates for the most gregarious and easily detectable species—especially those rarely present outside IWC-monitored sites—many widespread species (e.g., **Mute Swan**, **grebes**, **Coot**, **Moorhen**, as well as **Ardeidae** and **Anatidae**) are more diffusely distributed, often outside the boundaries of monitored wetlands. Because coverage of all wetlands (and non-wetland habitats) remains incomplete, a significant proportion of these populations is not recorded through IWC or other national monitoring schemes.

Thanks to the considerable effort made by local coordinators between 2016 and 2019 to digitize elementary counting units within functional sites, we now have a much more detailed and spatially refined view of where birds are counted in mid-January. Over the past five years, data have been collected at more than 10,000 elementary sites within some 500 functional sites.

These elementary site-scale count data can now be used to test and develop methods for estimating waterbird numbers in areas not covered by the January counts. The BTO (Frost *et al.* 2019) uses a variety of methods for different species to generate Britain's winter population size estimates, from the environmental stratification method (Méndez *et al.* 2015), to the extrapolation factor approach (Musgrove *et al.* 2011), and other methods exist. Nagy *et al.* (2022) provide a review of the existing methods and make some recommendations for their use in Europe.



Great Crested Grebe ©A. Dusart

We are optimistic that we will be able to begin testing these methods on a selection of the most widely dispersed species—such as the **Mute Swan**, **Common Coot**, and **Great Crested Grebe**—starting next year. Our goal is to deliver more robust wintering population estimates in time for the next Article 12 reporting cycle, expected in 2031.

Mute Swan
©F. Cahez



BIBLIOGRAPHY

- Banks A.N., Wright L.J., Maclean I.M.D., Hann C. & Rehfisch M.M. (2011) Introduced non-native waterbirds. Status within the African-Eurasian Flyways. pp. 17. BTO, AEWA, UNEP/AEWA Secretariat. Germany.
- Beal M., Nightingale J., Belo J.R., Batey C., Belting H., Bocher P., Burgess M., Craft T.B., Crockford N., Delaporte P., Donaldson L., Gélinaud G., Gill J.A., Gunnarsson T.G., Pórisson B., Gutiérrez J.S., Hooijmeijer J.C.E.W., Howison R.A., Hunke P., Jomat L., Lemke H., Ludwig J., Majoor F.A., Marlow C., Masero J.A., Melter J., Nicholson I., Parejo M., O'Mahony B., Pasanen E., Pessa J., Piersma T., Rocha A.D., Robin F., Roodbergen M., Rousseau P., Salewski V., Schmidt L., Smart J., Staneva A., Tibbitts T.L., Timonen S., Alves J.A. & Dias M.P. (2025) Site-level connectivity identified from multiple sources of movement data to inform conservation of a migratory bird. *Journal of Applied Ecology*, 62, 303-316.
- BirdLife International (2021) European Red List of Birds. pp. 52. Publications Office of the European Union, Luxembourg.
- Champagnon J., Kayser Y., Petit J., Marion L., Reeber S., Rodrigues-Perez D., Blanchon T., Hilaire S., Badone I., Crouzier P., Purenne R. & Gauthier-Clerc M. (2019) The Settlement of Glossy Ibis in France. *SIS Conservation*, 1, 50-55.
- Frost T.M., Austin G.E., Hearn R.D., McAvoy S.G., Robinson A.E., Stroud D.A., Woodward I.D. & Wotton S.R. (2019) Population estimates of wintering waterbirds in Great Britain. *British Birds*, 112, 130-145.
- Gaget E., Le Viol I., Pavón-Jordán D., Cazalis V., Kerbiriou C., Jiguet F., Popoff N., Dami L., Mondain-Monval J.Y., Defos du Rau P., Abdou W.A.I., Bozic L., Dakki M., Encarnação V.M.F., Erciyas-Yavuz K., Etayeb K.S., Molina B., Petkov N., Uzunova D., Zenatello M. & Galewski T. (2020) Assessing the effectiveness of the Ramsar Convention in preserving wintering waterbirds in the Mediterranean. *Biological Conservation*, 243, 108485.
- Jonas L., Brommer J.E., Jung M., Baláz M., Borg J.J., Božič L., Clausen P., Deroux A., Devos K., Domşa C., Faragó S., Fitzgerald N., Georgiev V., Haas F., Hornman M., Leronymidou C., Langendoen T., Lehtikainen A.S., Lindner K., Luigujõe L., Meissner W., Mikuska T., Molina B., Moniz F., Musilová Z., Portolou D., Quintenne G., Rantanen J., Šniaukšta L., Stipnice A., Teufelbauer N., Zenatello M. & Gaget E. (2025) Interactions between climate warming and management actions determining bird community change in protected areas. *Biological Conservation*, 308, 111213.
- Maclean I.M.D., Austin G.E., Rehfisch M.M., Blew J.A.N., Crowe O., Delany S., Devos K., Deceuninck B., GÜnter K., Laursen K., Van Roomen M. & Wahl J. (2008) Climate change causes rapid changes in the distribution and site abundance of birds in winter. *Global Change Biology*, 14, 2489-2500.
- Marion L. (2023) Recensement national des Hérons coloniaux de France 2020-2021. pp. 94. SESLG-CNRS-Université Rennes 1.
- Méndez V., Austin G.E., Musgrove A.J., Ross-Smith V.H., Hearn R.D., Stroud D.A., Wotton S.R. & Holt C.A. (2015) Use of environmental stratification to derive non-breeding population estimates of dispersed waterbirds in Great Britain. *Journal for Nature Conservation*, 28, 56-66.
- Musgrove A.J., Austin G.E., Hearn R.D., Holt C.A., Stroud D.A. & Wotton S.R. (2011) Overwinter population estimates of British waterbirds. *British Birds*, 104, 364-397.
- Nagy S. & Langendoen T. (2021) Report on the Conservation Status of Migratory Waterbirds in the Agreement Area - Eighth Edition. pp. 64. Wetlands International.
- Nagy S., Langendoen T., Frost T.M., Jensen G.H., Markones N., Mooij J.H., Paquet J.-Y. & Suet M. (2022) Towards improved population size estimates for wintering waterbirds. *Ornithologischer Beobachter*, 119, 348-361.
- Navedo J.G. & Piersma T. (2023) Do 50-year-old Ramsar criteria still do the best possible job? A plea for broadened scientific underpinning of the global protection of wetlands and migratory waterbirds. *Conservation Letters*, n/a, e12941.
- Santoro S., Green A.J. & Figuerola J. (2013) Environmental instability as a motor for dispersal: a case study from a growing population of Glossy Ibis. *PLoS ONE*, 8, e82983.
- Smith P.A., Smith A.C., Andres B., Francis C.M., Harrington B., Friis C., Morrison R.I.G., Paquet J., Winn B. & Brown S. (2023) Accelerating declines of North America's shorebirds signal the need for urgent conservation action. *Ornithological Applications*, 125.
- Van Roomen M., Reneerkens J., Citegetse G., Crowe O., Gueye K., Langendoen T., Dodman T., Meise K. & Schekkerman H. (2025) East Atlantic Flyway Assessment 2023. The status of coastal waterbird populations and their sites. Wadden Sea Flyway Initiative p/a CWSS, Wilhelmshaven, Germany, Wetlands International, Wageningen, The Netherlands, BirdLife International, Cambridge, United Kingdom. <https://doi.org/10.5281/zenodo.15355685>.
- Wauchope H.S., Jones J.P.G., Geldmann J., Simmons B.I., Amano T., Blanco D.E., Fuller R.A., Johnston A., Langendoen T., Mundkur T., Nagy S. & Sutherland W.J. (2022) Protected areas have a mixed impact on waterbirds, but management helps. *Nature*, 605, 103-107.
- Wetlands International (2025) Flyway trend analyses based on data from the African-Eurasian Waterbird Census from the period of 1967-2018. <https://iwc.wetlands.org/index.php/aewatrends8>.
- Wiegers J.N., Jongejans E., van Turnhout C.A.M., van den Bremer L., van der Jeugd H. & Kleyheeg E. (2022) Integrated population modeling identifies low duckling survival as a key driver of decline in a European population of the Mallard. *Ornithological Applications*, 124.

COUNTRY CONTACT AND NATIONAL COORDINATOR

LPO - BirdLife France

Gwenaël Quaintenne

LPO France - Fonderies Royales

8, rue du Dr Pujos - CS 90263

17305 Rochefort Cedex - France

wetlands-france@lpo.fr

www.lpo.fr



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