Aythya ferina (Common Pochard)

European Red List of Birds

Supplementary Material

The European Union (EU28) Red List assessments were based principally on the official data reported by EU Member States to the European Commission under Article 12 of the Birds Directive in 2019-20. For the European Red List assessments, similar data were sourced from BirdLife Partners and other collaborating experts in other European countries and territories. For more information, see BirdLife International (2021).

Contents

Recommended citation

BirdLife International (2021) European Red List of Birds. Luxembourg: Publications Office of the European Union.

Further information

http://datazone.birdlife.org/info/euroredlist
http://www.birdlife.org/europe-and-central-asia/european-red-list-birds-0
http://www.iucnredlist.org/regions/europe
http://ec.europa.eu/environment/nature/conservation/species/redlist/

Data requests and feedback

To request access to these data in electronic format, provide new information, correct any errors or provide feedback, please email science@birdlife.org.

Table 1. Reported national breeding population size and trends in Europe[1].

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (pairs)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Albania	0–2	<1	2007-2018	complete	?		2007-2018	complete	-	-80 to 0	1980-2018	expert	
Armenia	560–800	<1	2013-2018	complete	-	-20 to -10	2007-2018	complete	?		2003-2018	deficient	
Austria	40–90	<1	2013-2018	complete	-	-70 to -30	2007-2018	partial	-	-80 to -60	1981-2018	partial	
Belarus	2000–2500	2	2010-2018	partial	-	-50 to -20	2012-2019	expert	-	-50 to 50	1980-2019	expert	
Belgium	620–1200	<1	2013-2018	partial	?	-17 to 60	2008-2018	partial	+	276 to 627	1973-2018	partial	
Bosnia & HG	250–500	<1	2015-2018	complete	?	-10 to 10	2007-2018	complete	?		1980-2018	deficient	
Bulgaria	80–250	<1	2005-2018	partial	F		2000-2018	complete	+	5 to 20	1980-2018	expert	
Croatia	0	<1	2012-2018	deficient	?		2007-2018	deficient	?		1980-2018	deficient	
Czechia	7000–14000	9	2014-2017	complete	-	-22 to -18	2001-2017	complete	-		1981-2017	partial	
Denmark	330–340	<1	2017	partial	0	-16 to 92	2006-2017	complete	0	-58 to 1	1989-2017	complete	
Estonia	300–600	<1	2013-2017	expert	-	-50 to -20	2006-2017	expert	-	-945 to 132	1980-2017	expert	
Finland	600–750	<1	2018-2018	partial	-	-96 to -73	2007-2018	partial	-	-94 to -88	1986-2018	complete	
France	2500–4000	3	2013-2018	partial	?		2013-2018	deficient	-	-40 to -20	1985-2018	partial	
Georgia	10–30	<1	2018-2019	partial	?			deficient	?				
Germany	2800–3900	3	2016-2016	expert	-		2004-2016	expert	-		1980-2016	expert	
Greece	30–80	<1	2013-2018	partial	?		2007-2018	deficient	0		1980-2018	partial	
Hungary	500–1000	<1	2013-2018	complete	-	-75 to -67	2007-2018	partial	-	-87 to -80	1980-2018	partial	
Italy	280–380	<1	2010-2016	expert	+	85 to 90	2012-2016	expert	-	-10 to -5	1993-2018	expert	
Kosovo	10	<1	2007-2019	partial	0		2007-2018	partial	?		1990-2018	partial	
Latvia	500–600	<1	2015-2018	expert	-	-68	2004-2018	partial	-		1991-2017	partial	
Lithuania	400–500	<1	2013-2018	partial	-	-84 to -83	2013-2018	partial	-		1980-2018	expert	
Luxembourg	0–1	<1	2013-2018	complete	+		2007-2018	complete	+		1980-2018	complete	
North Macedonia	0–20	<1	2014-2019	expert	0		2007-2018	expert	?		1980-2019		
Moldova	80–150	<1	2014-2017	partial	0		2007-2018	partial	0		1990-2018	expert	
Montenegro	0–5	<1	2013-2018	partial	-		2007-2018	expert	?				
Netherlands	1800–2200	2	2013-2015	complete	+	9 to 58	2006-2017	complete	0	-34 to 14	1984-2017	complete	
Norway	15	<1	2013-2018	complete	?		2013-2018	expert	F		1980-2018	partial	
Poland	2000–6000	3	2013-2018	expert	0	-46 to 10	2007-2018	complete	-	-90 to -80	1980-2018	expert	
Portugal	30–100	<1	2013-2018	partial	?		2007-2018	deficient	?		1980-2018	deficient	
Romania	3000–12400	5	2013-2015	complete	?		2007-2018	deficient	?		1980-2018	deficient	
Russia	50000–80000	55	2008-2018	partial	-	0	2008-2018	partial	-	0	1980-2018	partial	
Serbia	770–1100	<1	2013-2018	partial	0	0	2007-2018	complete	0	0	1980-2018	complete	

Table 1. Reported national breeding population size and trends in Europe[1].

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (pairs)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Slovakia	300–500	<1	2013-2018	partial	-	-20 to -10	2007-2018	partial	-	-70 to -50	1980-2018	partial	
Slovenia	60–150	<1	2013-2018	complete	+		2007-2018	complete	+	300 to 700	1980-2018	expert	
Spain	4200–4600	4	2007-2018	partial	-		2007-2018	complete	F		1980-2018	complete	
Sweden	300–700	<1	2013-2018	partial	-	-70 to -30	2007-2018	partial	-	-95 to -75	1980-2018	partial	
Switzerland	6–9	<1	2013–2016	complete	0	-16 to 297	2007-2018	complete	F	-30 to 433	1990-2018	complete	
Turkey	500–1000	<1	2002-2012	partial	?		2002-2012	deficient	?		1980-2013	deficient	
Ukraine	7000–9500	7	2012-2018	partial	-		2010-2018	partial	-		1990-2018	partial	
United Kingdom	700–710	<1	2012-2016	complete	+		2001-2016	complete	+		1978-2016	complete	
EU28	28500–55000	34											
Europe	**89700–151000**	**100**											

[1] See 'Sources' at end of factsheet, and for more details on individual EU Member State reports, see the Article 12 reporting portal at http://bd.eionet.europa.eu/article12/report.
[2] The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.
[3] In the few cases where population size estimates were reported in units other than those specified, they were converted to the correct units using standard correction factors.
[4] The 'method used' (replacing the data 'quality' assessment in the 2015 European Red List) is reported as: a) Complete: complete survey or a statistically robust estimate; b) Partial: based mainly on extrapolation from a limited amount of data; c) Expert: based mainly on expert opinion with very limited data; d) Defficient: insufficient or no data available.
[5] The robustness of regional trends to the effects of any missing or incomplete data was tested using plausible scenarios, based on other sources of information, including any other reported information, recent national Red Lists, scientific literature, other publications and consultation with relevant experts.
[6] Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).
[7] Trend magnitudes are rounded to the nearest integer.

Table 2. Reported national wintering population sizes and trends in Europe[1]. Note that some countries within the species' wintering range did not report any data, and that only minimum totals are presented, to avoid double-counting of birds moving between countries.

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (individuals)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Albania	900–10700	<1	2007-2018	complete	0	-47 to 52	2007-2018	complete	-	-15 to 0	1980-2018	complete	
Armenia	3000–5000	<1	2013-2018	partial	-	-10 to -5	2007-2018	partial	?		2003-2018	deficient	
Austria	3600–13100	<1	2013-2018	complete	0		2013-2018	complete	-		1981-2014	complete	
Azerbaijan	100000–300000	23	1996-2019	complete	-		2010-2019	complete	-		1980-2019	expert	
Belarus	5–30	<1	2013-2018	partial	-	-100 to -50	2000-2012	partial	?				
Belgium	4000–8300	<1	2013-2018	complete	-	-80 to -64	2007-2018	complete	-	-87 to -73	1992-2018	complete	
Bosnia & HG	1000–5000	<1	2015-2018	complete	?		2007-2018	deficient	?		1980-2018	deficient	
Bulgaria	17000–31000	3	2013-2018	complete	F		2000-2018	complete	F		1980-2018	complete	
Croatia	0	<1	2012-2018	deficient	?		2007-2018	deficient	?		1980-2018	deficient	
Cyprus	60–490	<1	2013-2018	partial	0	0	2007-2018	partial	+	200 to 500	1980-2018	expert	
Czechia	1300–2700	<1	2015-2019	complete	+		2008-2019	complete	-		1980-2019	complete	
Denmark	3600–3700	<1	2016-2016	complete	F		2006-2017	complete	F		1980-2017	complete	
Estonia	5–30	<1	2013-2017	complete	0	0 to 20	2006-2017	complete	0	0 to 20	1980-2017	complete	
France	52500–81000	10	2013-2017	complete	-	-40	2007-2017	complete	-	-15	1980-2017	complete	
Georgia	48–140	<1	2014-2019	expert	?				-		2002-2019	partial	
Germany	91000	12	2011-2016	complete	0	-9 to -2	2003-2016	complete	0	-10 to -3	1980-2016	complete	
Greece	40000–55000	6	2015	partial	?		2007-2018	deficient	?		1980-2018	deficient	
Hungary	2000–2500	<1	2015-2018	partial	F		2007-2018	complete	-	-81 to -66	1996-2018	complete	
Rep. Ireland	4700–4800	<1	2011-2016	complete	-		2004-2016	complete	?		1987-2016	deficient	
Italy	17500–29300	3	2013-2015	partial	-	-35 to -20	2009-2015	partial	-	-60 to -25	1991-2015	partial	
Kosovo		<1	2019		?				?				
Luxembourg	80–200	<1	2013-2018	complete	0	0 to 10	2007-2018	complete	+	0 to 50	1980-2018	expert	
North Macedonia	200–2000	<1	2013-2018	complete	0		2010-2019	complete	-	-98 to -90	1988-2018	complete	
Moldova	500–800	<1	2018-2019	partial	F		2007-2018	partial	0		1990-2018	expert	
Montenegro	3000–20000	1	2013-2018	expert	0		2007-2018	expert	?				
Netherlands	28500–42700	5	2013-2017	complete	-	-36 to -23	2006-2017	complete	-	-76 to -58	1981-2017	complete	
Poland	1400–4000	<1	2013-2018	complete	+	111 to 347	2011-2018	complete	?		1980-2018	deficient	
Portugal	430–2100	<1	2013-2018	complete	?	-31 to 31	2007-2018	complete	0		1988-2018	partial	
Romania	14500–35800	3	2013-2018	partial	-	-8 to -1	2013-2018	complete	-	-7 to -4	2000-2018	complete	
Serbia	3500–7500	<1	2013-2018	complete	F		2013-2018	complete	-	-79 to -50	1980-2018	partial	
Slovakia	700–3000	<1	2013-2018	complete	-	-90 to -30	2007-2018	complete	+	100 to 300	1980-2018	complete	

Table 2. Reported national wintering population sizes and trends in Europe[1]. Note that some countries within the species' wintering range did not report any data, and that only minimum totals are presented, to avoid double-counting of birds moving between countries.

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (individuals)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Slovenia	400–1600	<1	2013-2018	complete	0		2007-2018	complete	-	-80 to -60	1980-2018	expert	
Spain	18200–38100	4	2007-2018	complete	?	-66 to 8	2007-2018	complete	-		1980-2018	complete	
Sweden	800–2000	<1	2013-2018	complete	?	-43 to 13	2007-2018	complete	+	243 to 452	1980-2018	complete	
Switzerland	30500–41700	5	2015-2019	complete	+	19 to 21	2008-2019	complete	-	-2 to -1	1980-2019	complete	
Turkey	80100–130000	14	2013-2019	complete	?		2008-2019	deficient	?		1980-2019	deficient	
Ukraine	6000–15000	1	2014-2017	partial	-		2007-2018	partial	F		1980-2018	partial	
United Kingdom	29100–29200	4	2012-2016	complete	-		2005-2016	complete	-		1980-2016	complete	
EU28	317000–446000	51											
Europe	**560000–1020000**	**100**											

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[6] Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).
[7] Trend magnitudes are rounded to the nearest integer.

Trend maps

A symbol appears in each country where the species occurs: the shape and colour of the symbol represent the population trend in that country, and the size of the symbol corresponds to the proportion of the European population occurring in that country.

KEY

- Large increase (≥50%)
- Moderate increase (20–49%)
- Small increase (<20%)
- Increase of unknown magnitude
- Stable or fluctuating
- Unknown
- Present (no population or trend data)
- Extinct since 1980
- Large decrease (≥50%)
- Moderate decrease (20–49%)
- Small decrease (<20%)
- Decrease of unknown magnitude

Each symbol, with the exception of Present and Extinct, may occur in up to three different size classes, corresponding to the proportion of the European population occurring in that country.

- Large: ≥10% of the European population
- Medium: 1–9% of the European population
- Small: <1% of the European population

The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Figure 1. Breeding population sizes and short-term trends across Europe.

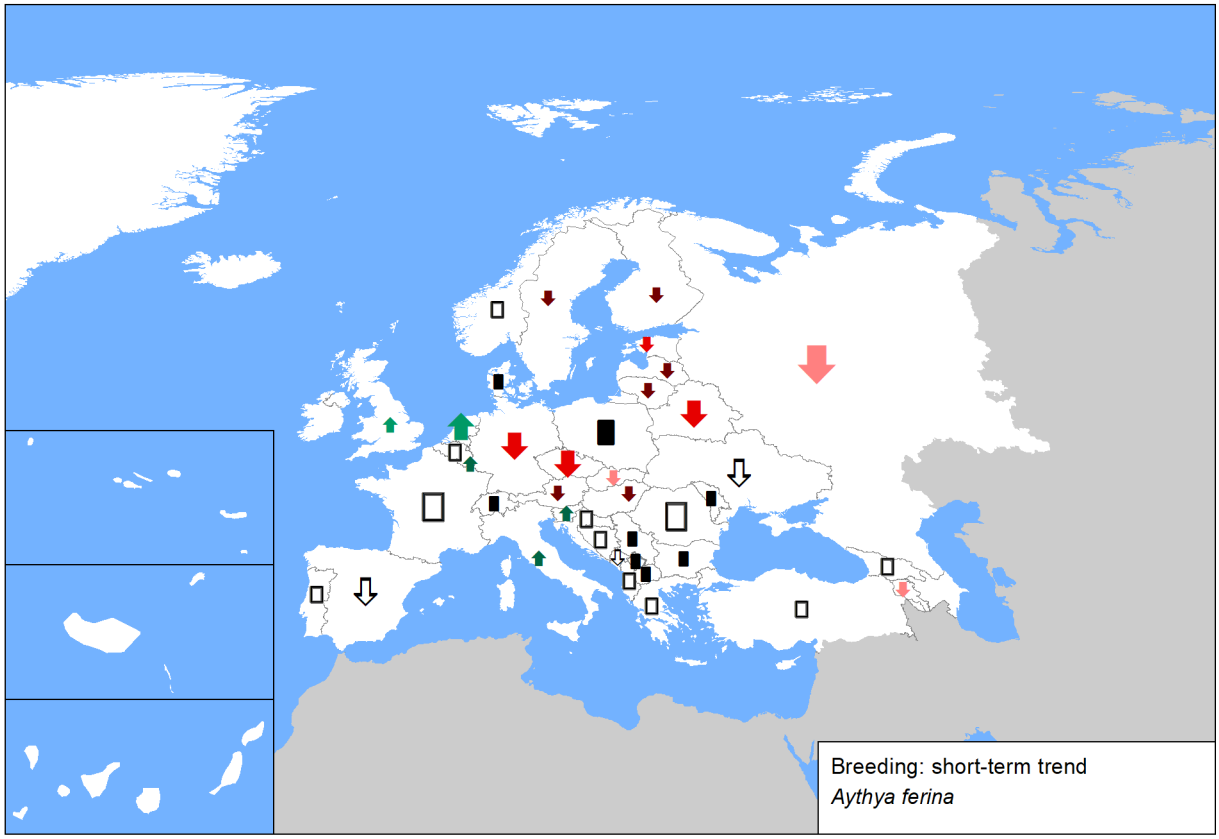


Figure 2. Breeding population sizes and long-term trends across Europe.

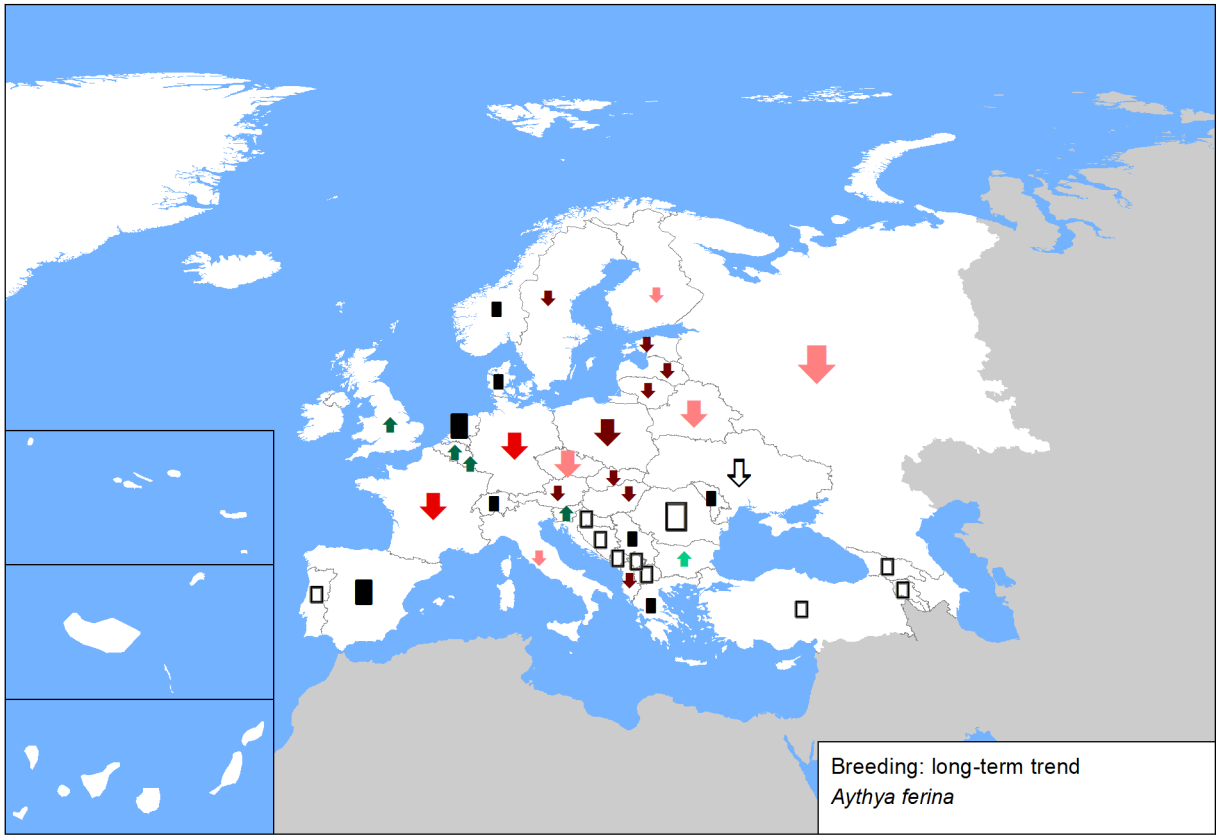


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

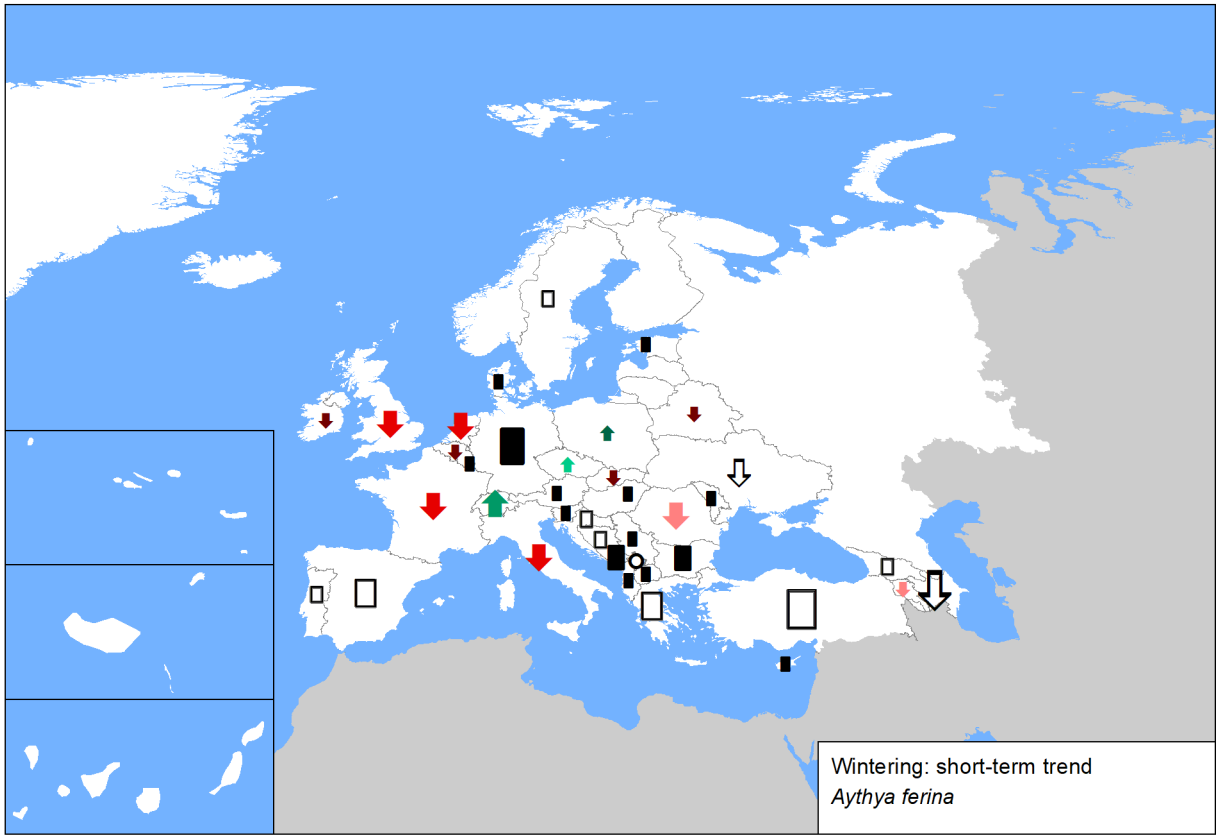
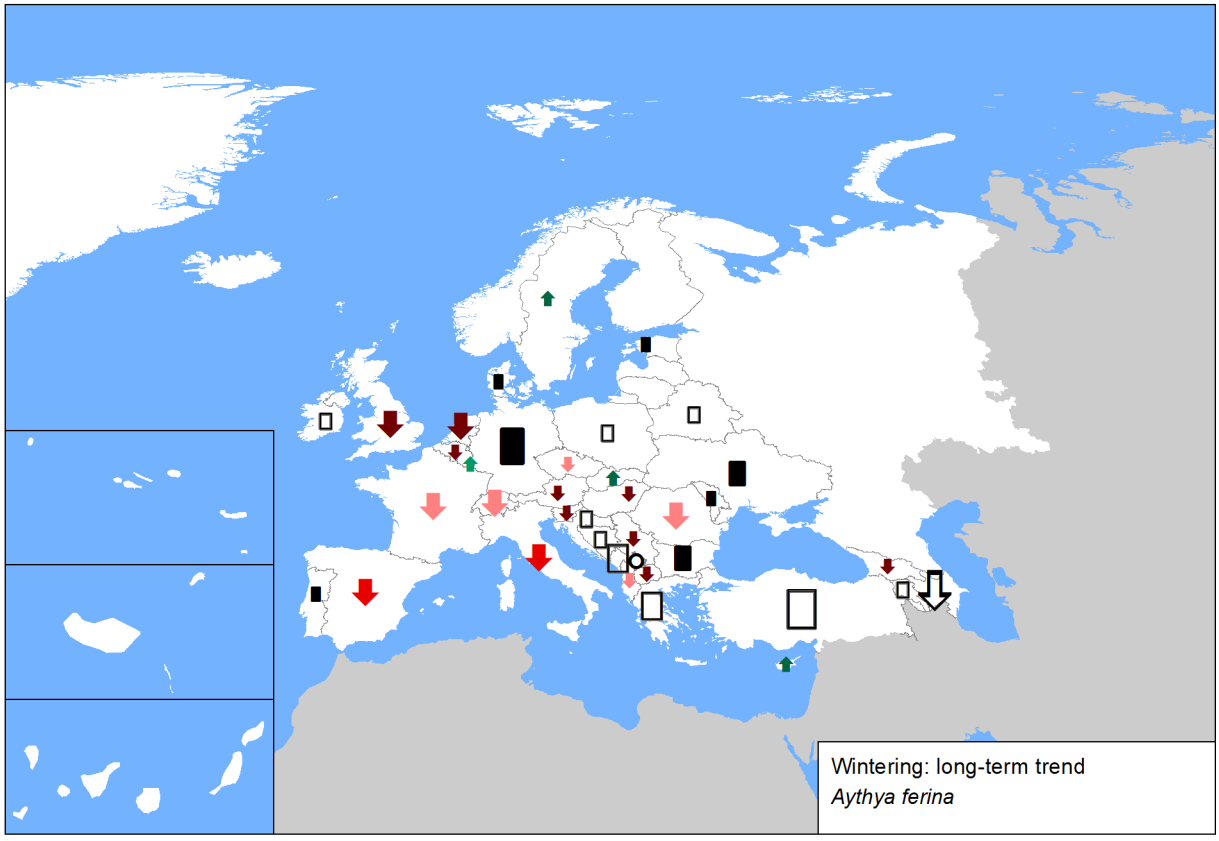


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



Sources

Albania

Breeding population size: Bino & Xeka pers. obs.
Breeding short-term trend: Bino & Xeka pers. obs.
Breeding long-term trend: Bino pers. obs.
Winter population size: Bino pers. obs.
Winter short-term trend: Bino et al. 2018
Winter long-term trend: Bino et al. 2018

Armenia

Breeding population size: TSE NGO
Breeding short-term trend: TSE (2020) The Atlas of the Breeding Birds in Armenia. In preparation.
Breeding long-term trend: TSE (2020) The Atlas of the Breeding Birds in Armenia. In preparation.
Winter population size: TSE NGO, National Bird Monitoring
Winter short-term trend: TSE calculations using TRIM
Winter long-term trend: TSE calculations using TRIM

Austria

Breeding population size: BirdLife Austria, unpublished data from www.ornitho.at
Breeding short-term trend: BirdLife Austria, unpublished data from www.ornitho.at; BirdLife Austria, unpublished archive data
Breeding long-term trend: Dvorak, Ranner & Berg 1993 (Atlas of Austrian Breeding Birds)
Winter population size: BirdLife Austria, data of the International Waterfowl Counts (January count)
Winter short-term trend: BirdLife Austria, data of the International Waterfowl Counts (January count)
Winter long-term trend: BirdLife Austria, unpublished data based on indices calculated by the program TRIM

Azerbaijan

Winter population size: AOS data base
Winter short-term trend: AOS Data Base
Winter long-term trend: AOS Data Base

Belarus

Breeding population size: Research work of the National Academy of Sciences of the Republic of Belarus “Dynamics and predictive assessment of changes in the state of populations of the main resource and biocenotically most important bird species in Belarus”
Breeding long-term trend: Ostrovski O., Natykanets V., Zhuravliou D. Species composition and numbers of waterfowl of Lake Osveiskoe during past 30 years. //Proceedings of the 3rd International conference "Protected natural territories and objects of Belarusian Paazierje: current status and prospects" – 2009. – Vitebsk. – P .66-67 Viksne J., Svazas S., Czajkovski A., Janaus M., Mischenko A., Kozulin A., Kuresoo A., Serebryakov V. Atlas of Duck populations in Eastern Europe. – 2010. – Vilnius, Akstis. – 199 p. Nikiforov M.E., Kozulin A.V., eds. Belarussian birds at the beginning of XXI century: status, numbers, distribution. - 1997. - Minsk. - 187 p.
Winter population size: Bogdanovich I.A. - personal communication
Winter short-term trend: Bogdanovich I.A. - personal communication

Belgium

Breeding population size: Vermeersch G. et al. (2018, in press). Broedvogels in Vlaanderen in de periode 2013-2018. Rapporten van het Instituut voor Natuur- en Bosonderzoek (INBO), Brussel. / Paquet, J-Y., Anselin, A., Vermeersch, G., Derouaux, A., Devos, K. (2019, in prep.). Contribution of Belgium to EBCC European Breeding Bird Atlas 2. Internal Report.
Breeding short-term trend: Vermeersch G. et al. (2018, in press). Broedvogels in Vlaanderen in de periode 2013-2018. Rapporten van het Instituut voor Natuur- en Bosonderzoek (INBO), Brussel. / Paquet, J-Y., Anselin, A., Vermeersch, G., Derouaux, A., Devos, K. (2019, in prep.). Contribution of Belgium to EBCC European Breeding Bird Atlas 2. Internal Report.
Breeding long-term trend: Vermeersch G. et al. (2018, in press). Broedvogels in Vlaanderen in de periode 2013-2018. Rapporten van het Instituut voor Natuur- en Bosonderzoek (INBO), Brussel. / Paquet, J-Y., Anselin, A., Vermeersch, G., Derouaux, A., Devos, K. (2019, in prep.). Contribution of Belgium to EBCC European Breeding Bird Atlas 2. Internal Report.
Winter population size: Waterbird database INBO
Winter short-term trend: Waterbird database INBO & Aves
Winter long-term trend: Waterbird database INBO & Aves

Bosnia and Herzegovina

Breeding population size: Based on data for EBBA2
Breeding short-term trend: more individual articles e.g published in magazine Bilten mreže posmatrača ptica u Bosni i Hercegovini-see https://ptice.ba/bs/category/bilteni_/), individual reports (e.g. for EBBA2, projects etc)
Winter population size: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)
Winter short-term trend: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)

Bosnia and Herzegovina

Winter long-term trend: There are no qualitative data before 2005 to make estimates

Bulgaria

Breeding population size: Iankov, P. (ed) 2007. Breeding Bird Atlas of Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB; National Art. 12 reporting database 2013-2018;

Breeding short-term trend: Iankov, P. (ed) 2007. Breeding Bird Atlas of Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB; National Art. 12 reporting database 2013-2018; Petkov, N. 2004. Comparative Ecological Studies on the Ferruginous Duck and Common Pochard during breeding season in Bulgaria. PhD thesis, Bulgarian Academy of Sciencies, Sofia. Central Laboratory of General Ecology

Breeding long-term trend: Petkov, N. 2004. Comparative Ecological Studies on the Ferruginous Duck and Common Pochard during breeding season in Bulgaria. PhD thesis, Bulgarian Academy of Sciencies. Sofia, Central Laboratory of General Ecology.

Winter population size: Wetlands International (2019): Submitted IWC data for Bulgaria for period 2013-2018.; National Art. 12 reporting database 2013-2018; National workshop of experts, Sofia 27-29.8.2019; 1980 - 2001 (second max 30 029 in 1998year) Dimitrov, M., T. Michev, L. Profirov, K. Nyagolov. 2005. Waterbirds of Bourgas Wetlands: Results and Evaluation of the Monthly Waterbirds Monitoring 1996-2002. Bulgarian Biodiversity Foundation and Publ. House Pensoft, Sofia, 160 pp.;

Winter short-term trend: IWC counts in Bulgria; National Art. 12 reporting database 2013-2018; BSPB GIS related ornithological database

Winter long-term trend: BSPB GIS related ornithological database

Croatia

Breeding population size: Središnja lovna evidencija (https://sle.mps.hr) Nedovoljan broj podataka za procjenu populacije.

Breeding short-term trend: No data available.

Breeding long-term trend: No data available.

Winter population size: No data available.

Winter short-term trend: No data available.

Winter long-term trend: No data available.

Cyprus

Winter population size: Monthly waterbird counts by BirdLife Cyprus and Game & Fauna Service, as published in BirdLife Cyprus monthly checklists and also by the Game & Fauna Service; Analysis of recent BirdLife Cyprus bird sightings records reported in the society's annual reports. Very poor data

Winter short-term trend: Monthly waterbird counts by BirdLife Cyprus and Game & Fauna Service, as published in BirdLife Cyprus monthly checklists and also by the Game & Fauna Service; Analysis of recent BirdLife Cyprus bird sightings records reported in the society's annual reports.

Winter long-term trend: More recent records (2000 onwards) as above, pre-2000 records based on birdwatching records as reported in BirdLife Cyprus annual reports

Czechia

Breeding population size: Šťastný et Bejček in prep. - Atlas hnízdního rozšíření ptáků ČR 2014-2017

Breeding short-term trend: Trends in waterbird breeding population size were estimated using changes in population data from nation-wide numbers project of “Atlas of Breeding Bird Distribution” carried out in whole Czech Republic in 2001 -2003 and 2014 – 2017. Range of relative change in breeding population size was used as the measurement of population trend. The values of relative rate of change were compared with data from annual monitoring (census in May – see Musil & Fuchs 1994, Musil et al. 2001, Čehovská et al. 2019 for the methods) on limited amount of sites (fishpond regions in south and central Bohemia - see Musil & Fuchs 1994). Čehovská M., Musil P., Musilová Z., Poláková, K. & Zouhar J. 2019: Diving duck census efficiency based on monitoring of individually marked females: the influence of breeding stage of individual females and timing of census. Bird Study in press. Musil P. Cepák J. Hudec K. & Zárybnický J. 2001. The long-term trends in the breeding waterfowl populations in the Czech Republic. OMPO, Institute of Applied Ecology, Kostelec nad Černými lesy. Musil P. & Fuchs R. 1994: Changes in abundance of water birds species in southern Bohemia (Czech Republic) in the last 10 years. Development in Hydrobiology. In: Kerekes J. J. [ed.]: Aquatic Birds in Trophic Web of Lakes. Hydrobiologia 279/280: 511–519.

Breeding long-term trend: The long-term trends were analysed using data from annual waterbird census carried out in May (see Musil & Fuchs 1994, Musil et al. 2001, Čehovská et al. 2019 for the methods) on limited amount of sites (fishpond regions in south and central Bohemia – see Musil & Fuchs 1994). The individual species trends in numbers were calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). The additive slope (i.e. the change in indices from one year to the next) was used to estimate the Czech trend, see also Fouque et al. (2009), Musil et al. (2011). Čehovská M., Musil P., Musilová Z., Poláková, K. & Zouhar J. 2019: Diving duck census efficiency based on monitoring of individually marked females: the influence of breeding stage of individual females and timing of census. Bird Study in press. Fouque C, Guillemain M, Schricke V (2009) Trends in the numbers of Coot Fulica atra and wildfowl Anatidae wintering in France and their relationship with hunting activity at wetland sites. Wildfowl. Special Issue Musil P. Cepák J. Hudec K. & Zárybnický J. 2001. The long-term trends in the breeding waterfowl populations in the Czech Republic. OMPO, Institute of Applied Ecology, Kostelec nad Černými lesy. Musil P. & Fuchs R. 1994: Changes in abundance of water birds species in southern Bohemia (Czech Republic) in the last 10 years. Development in Hydrobiology. In: Kerekes J. J. [ed.]: Aquatic Birds in Trophic Web of Lakes. Hydrobiologia 279/280: 511–519. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460.

Winter population size: Waterbird numbers were recorded in mid-January by regular citizen-science monitoring programme - the International Waterbird Census (IWC) – see Gilissen et al. 2002, Wetlands International 2006, Wetlands International 2019. Hundreds of volunteer birdwatchers conduct the mid-January counts on predetermined dates and sites each year, aiming to maximize synchrony (Gilissen et al. 2002, Musil et al. 2011, Musilová et al. 2014). The estimation of population size was calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). ‘Time Totals’ values of the data (i.e. the actual count values plus the numbers of birds estimated by the TRIM software) for all 1155 sites included in the analysis were used to generate total estimates of the range of numbers of the waterbird species wintering in the Czech Republic between 2015 and 2019. We use the range (min–max) of population estimates due to the effect of between-year variation in numbers because of variable climatic conditions (Musil et al. 2008, Musilová et al. 2018). Gilissen N, Haanstra L, Delany S, Boere G, Hagemeijer W (2002) Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1987, 1988 and 1999. Results from the International Waterbird Census. Wetlands International Global Series No. 11, Wetlands International, Wageningen, The Netherlands. Musil P, Darolová A, Jureček J, Musilová Z, Podhrázský M, Slabeyová K (2008) The long-term trends in numbers of wintering geese in the Czech Republic and Slovakia in 1991–2007. Tichodroma 20: 61–67. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460. Musilová Z, Musil P, Zouhar J, Adam M (2018) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. Ibis: 160: 582–596. Musilová Z, Musil P, Zouhar J, Bejček V, Šťastný K, Hudec K (2014) Numbers of wintering waterbirds in the Czech Republic: long-term and spatial-scale approaches to assess population size. Bird Study 61: 321–331.

Czechia

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Denmark

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Winter population size: Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

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Estonia

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Breeding short-term trend: Estonian Working Group on Bird Status and Numbers

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Winter population size: Estonian Working Group on Bird Status and Numbers

Winter short-term trend: Estonian Working Group on Bird Status and Numbers

Winter long-term trend: Estonian Working Group on Bird Status and Numbers

Finland

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Finland

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France

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Winter long-term trend: Gaudard C.et al. 2017. Synthèse des dénombrements d'oiseaux d'eau en France à la mi-janvier 2017. 178 p

Georgia

Breeding population size: Nika Kerdikoshvili: niko.kerdikoshvili.1@iliauni.edu.ge; Zura Javakhishvili: zurab.javakhishvili.1@iliauni.edu.ge;

Winter population size: www.observation.org

Germany

Breeding population size: Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster.

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Winter short-term trend: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)

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Greece

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Winter short-term trend: no data available

Winter long-term trend: no data available

Hungary

Breeding population size: National Park Directorates' databases "A közösségi jelentőségű természeti értékek hosszú távú megőrzését és fejlesztését, valamint az EU Biológiai Sokféleség Stratégia 2020 célkitűzéseinek hazai szintű megvalósítását megalapozó stratégiai vizsgálatok" programme

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Winter population size: Expert opinions Faragó S. (2017): Magyar Vízivad Közlemények No. 29. Soproni Egyetem Kiadó, 304 p. Hungarian Waterfowl Monitoring database National Park Directorates' databases

Winter short-term trend: Expert opinions Faragó S. (2017): Magyar Vízivad Közlemények No. 29. Soproni Egyetemi Kiadó, 304 p. Hungarian Waterfowl Monitoring database National Park Directorates' databases

Hungary

Winter long-term trend: Expert opinions Faragó S. (2006): A vonuló vízivad populációk fenntartásának alapjai Magyarországon. Doktori Értekezés. Mellékletek, 305 p. Faragó S. (2017): Magyar Vízivad Közlemények No. 29. Soproni Egyetemi Kiadó, 304 p. Hungarian Waterfowl Monitoring database National Park Directorates' databases

Republic of Ireland

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Winter short-term trend: Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. (2019) Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Winter long-term trend: No long term trend can be calculated

Italy

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Breeding short-term trend: Brichetti P., Fracasso G., 2018. The Birds of Italy. Vol. I. Anatidae-Alcidae. Ed. Belvedere, Latina (Italy), "historia naturae" (6), pp. 512.

Breeding long-term trend: Brichetti P., Meschini E., 1993. Stima delle popolazioni di uccelli nidificanti. In Meschini E., Frugis S.,1993. Atlante degli uccelli nidificanti in Italia. Suppl. Ric. Biol. Selvaggina, 20, 1-345.

Winter population size: ISPRA-IWC Database

Winter short-term trend: ISPRA-IWC Database - Zenatello M., Baccetti N., Borghesi F., 2014. Risultati dei censimenti degli uccelli acquativi svernanti in Italia. Distribuzione, stima e trend delle popolazioni nel 2001-2010. ISPRA, Serie Rapporti, 206/2014, pp: 24-28.

Winter long-term trend: ISPRA-IWC Database; Baccetti N, Dall'Antonia P, Magagnoli P, Melega L, Serra L, Soldatini C, Zenatello M 2002. Risultati dei censimenti degli uccelli acquatici svernanti in Italia: distribuzione, stima e trend delle popolazioni nel 1991-2000. Biol. Cons. Fauna 111: 19-20.

Kosovo

Breeding population size: Qenan Maxhuni

Breeding short-term trend: Qenan Maxhuni

Breeding long-term trend: Puzovic, S. et al. (2004): Birds of Serbia and Montenegro – Size of nesting populations. I trends: 1990-2002. Ciconia 12

Latvia

Breeding population size: Unpublished data for European Breeding Bird Atlas (2013-2017); Expert: Andris Dekants, andris.dekants@lob.lv

Breeding short-term trend: Unpublished data for European Breeding Bird Atlas (2013-2017); Expert: Andris Dekants, andris.dekants@lob.lv

Breeding long-term trend: Strazds M., Priednieks J., Vaverins G. 1994. [Size of Latvian bird populations.] (in Latvian) In: Putni dabā, 4: 3–18 Unpublished data for European Breeding Bird Atlas (2013-2017); Expert: Andris Dekants, andris.dekants@lob.lv

Lithuania

Breeding population size: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania.

Breeding short-term trend: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania.

Breeding long-term trend: Logminas, V. (ed.). 1991. Lietuvos fauna: paukščiai. Vilnius: „Mokslas". Kurlavičius, P. (ed.) 2006. Lietuvos perinčių paukščių atlasas. Kaunas: „Lututė". Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) BirdLife International/European Bird Cencus Council. 2000. European bird populations: estimates and trends. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 10). Raudonikis L. 2004. Important Bird Areas of the European Union Importance in Lithuania. Lithuanian Ornithological Society & Institute of Ecology of Vilnius University. Lutute, Vilnius. Jusys, V., Karalius, S., Raudonikis, L. 2012. Lietuvos paukščių pažinimo vadovas. Kaunas: „Lututė". Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania. Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius.

Luxembourg

Breeding population size: Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg

Breeding short-term trend: Biver, G. (2013): Waterbird count - recensement hivernal des oiseaux d'eau 2009-2012. Regulus Wissenschaftliche Berichte, 28: 43-58.; Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembourg

Breeding long-term trend: Biver, G. (2013): Waterbird count - recensement hivernal des oiseaux d'eau 2009-2012. Regulus Wissenschaftliche Berichte, 28: 43-58.; Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembourg

Winter population size: Biver, G. (2013): Waterbird count - recensement hivernal des oiseaux d'eau 2009-2012. Regulus Wissenschaftliche Berichte, 28: 43-58.; Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg ; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembour

Winter short-term trend: Biver, G. (2013): Waterbird count - recensement hivernal des oiseaux d'eau 2009-2012. Regulus Wissenschaftliche Berichte, 28: 43-58.; Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg ; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembour

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Luxembourg

Winter long-term trend: Biver, G. (2013): Waterbird count - recensement hivernal des oiseaux d'eau 2009-2012. Regulus Wissenschaftliche Berichte, 28: 43-58.; Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg ; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembour

North Macedonia

Breeding population size: unpublished data from the European Breeding Bird Atlas 2
Breeding short-term trend: unpublished data from the European Breeding Bird Atlas 2
Winter population size: unpublished IWC data of the Macedonian Ecological Society
Winter short-term trend: unpublished IWC data of the Macedonian Ecological Society
Winter long-term trend: Micevski, B. (1991). Faunistical analysis and structure of Dojran Lake winter ornithofauna. God. zb., Biol. 43–44: 65–73; Micevski, B. (1999). Winter census of the waterfowl on the Macedonian part of Ohrid Lake in January 1998 (with structural, dietary and evaluation analyses. In: Special issues of Macedonian Ecological Society. pp. 313–323. MES.; Micevski, B. (1992). Structural and faunistical characteristics of the Prespa Lake winter ornithofauna. God. zb., Biol. 45: 51–55; Micevski, B., Schneider, M. (1997). Winter census of waterfowl in Macedonian part of Prespa Lake in January 1997 (with structural, dietary and evaluation analyses). In: Towards Integrated Conservation and Sustainable Development of Transboundary Macro and Micro Prespa Lakes pp. 160–164. Towards Integrated Conservation and Sustainable Development of Transboundary Macro and Micro Prespa Lakes. Preservation and Protection of Natural Environment in Albania, Korcha, Albania.; Micevski, B. (1996). Ohrid Lake winter ornitofauna (Faunistical and Structural Characteristics). God. Zb., Biol. 49: 85–93; Fremuth, W., Bino, T., Bego, F., Jorgo, G., Micevski, B., Anastasovski, V., Tzvetkov, T., Hristov, I., Schneider-Jacoby, M., Shumka, S. (2000). Four years of simultaneous wintering waterbird census at the Ohrid and Prespa Lakes 1997-2000. In: Grupche, Lj. & Kungulovski, Gj. (eds.). Proceedings of the International Symposium 'Sustainable development of Prespa Region' pp. 28–38. Macedonian Ecological Society; Catsadorakis, G., Aleksi, P., Avramoski, O., Bino, T., Bojadzi, A., Brajanoski, Z., Fremuth, W., Kazoglou, Y., Koutseri, I., Logotheti, A., Malakou, M., Nikolaou, H., Nikolaou, L., Putilin, K., Shumka, S., Uzunova, D., Velevski, M. (2013). Waterbirds wintering at the Prespa lakes as revealed by simultaneous counts in the three adjoining littoral states. Macedonian Journal of Ecology and Environment 15(1): 23–31; unpublished IWC data of the Macedonian Ecological Society

Moldova

Breeding population size: Moldova`s contribution for the second European Breeding Bird Atlas (EBBA2)
Breeding short-term trend: SPPN expert opinion (sppn.moldova@gmail.com)
Breeding long-term trend: SPPN expert opinion (sppn.moldova@gmail.com)
Winter population size: International Waterbird Census
Winter short-term trend: SPPN expert opinion (sppn.moldova@gmail.com)
Winter long-term trend: SPPN expert opinion (sppn.moldova@gmail.com)

Montenegro

Breeding population size: Rubinić,B., Sackl, P. & Gramatikov, M. (2019): Conserving of wild birds in Montenegro. The first inventory of potential Special Protection Areas in Montenegro. Aam Consulting. Budapest xiii + 328 pp.
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Netherlands

Breeding population size: Sovon Bird atlas (Sovon 2018)
Breeding short-term trend: NEM (Sovon, RWS, CBS, provincies)
Breeding long-term trend: NEM (Sovon, RWS, CBS, provincies)
Winter population size: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)
Winter short-term trend: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)
Winter long-term trend: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)

Norway

Breeding population size: Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2.
Breeding short-term trend: Taffeland Aythya ferina, unpublished factsheet BirdLife Norway
Breeding long-term trend: Shimmings, P. & Øien, I.J. 2015. Bestandsestimater for norske hekkefugler. NOF Rapport 2-2015. 268 pp.

Poland

Breeding population size: Chodkiewicz T., Kuczyński L., Sikora A., Chylarecki P., Neubauer G., Ławicki Ł., Stawarczyk T. 2015. Ocena liczebności populacji ptaków lęgowych w Polsce w latach 2008–2012. Ornis Polonica 56: 149-189: A. Sikora - unpublished information
Breeding short-term trend: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MPM)
Breeding long-term trend: Tucker G.M., Heath M.F. 1994. Birds in Europe: their conservation status. BirdLife International, Cambridge, UK.; BirdLife International 2004. Birds in Europe: population estimates, trends and conservation status. BirdLife International, Cambridge, UK; To
Winter population size: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MZPW – Wintering Waterbird Survey & MZPM – Wintering Seabirds Survey)
Winter short-term trend: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MZPW)
Winter long-term trend: Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland

Portugal

Breeding population size: eBird (2019). eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org/portugal/home. (Accessed: October 22, 2018).
Winter population size: Programa Nacional de Monitorização de Aves Aquáticas Invernantes

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Portugal

Winter short-term trend: Programa Nacional de Monitorização de Aves Aquáticas Invernantes
Winter long-term trend: Sousa J (2002b). Tendências populacionais de aves aquáticas. Relatório de estudo integrado no Projecto do Instituto da Conservação da Natureza "Livro Vermelho dos Vertebrados de Portugal - Revisão"/Programa Operacional do Ambiente, não publicado.; Programa Nacional de Monitorização de Aves Aquáticas Invernantes

Romania

Breeding population size: Romanian Common Bird Monitoring Programme, Breeding Waterbird Monitoring Programme, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database
Breeding short-term trend: Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) Database
Breeding long-term trend: Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) Database
Winter population size: International Waterbird Census, Romania, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database
Winter short-term trend: International Waterbird Census, Romania, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database
Winter long-term trend: International Waterbird Census, Romania, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database

Russia

Breeding population size: Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia
Breeding short-term trend: Mischenko & Kharitonov 2018; Fox et al. 2016; Kouzov 2015
Breeding long-term trend: Krivenko & Vinogradov 2008; Mischenko & Kharitonov 2018; Fox et al. 2016

Serbia

Breeding population size: EBBA2 project; Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.
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Winter population size: IWC database
Winter short-term trend: IWC database
Winter long-term trend: IWC database; Bioras database http://www.bioras.petnica.rs/home.php

Slovakia

Breeding population size: Coordinatory group for reporting 2019
Breeding short-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018.
Breeding long-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Danko Štefan, Darolová Alžbeta, Krištín Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002.
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Breeding population size: Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): Atlas ptic Slovenije. Popis gnezdilk 2002–2017. – DOPPS, Ljubljana.
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Spain

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