

***Anser anser* (Greylag Goose)**

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).

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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.

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Table 1. Reported national breeding population size and trends in Europe¹.

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		<1	2007-2018	complete	?		2007-2018	complete	?		1980-2018	expert	
Armenia	39–90	<1	2013-2018	complete	-	-7 to -3	2007-2018	complete	?		2003-2018	deficient	
Austria	1100–2000	<1	2013-2018	complete	+		2007-2018	complete	+		1981-2018	partial	
Azerbaijan	250–1000	<1	1996-2019	expert	0		2013-2019	expert	?		1980-2019	expert	
Belarus	1000–1200	<1	2010-2018	partial	+	1000 to 1200	2012-2019	expert	+	1000 to 1200	1980-2019	expert	
Belgium	2000–5000	1	2013-2018	complete	+	60 to 300	2008-2018	complete	+	399900 to 999900	1973-2018	partial	
Bosnia & HG	5–15	<1	2015-2018	complete	+		2007-2018	complete	?		1980-2018	deficient	
Bulgaria	15–25	<1	2005-2018	partial	F		2000-2018	partial	F		1980-2018	expert	
Croatia	90–200	<1	2013-2018	expert	?		2007-2018	deficient	?		1980-2018	deficient	
Czechia	1500–2000	<1	2014-2017	complete	+	124 to 150	2001-2017	complete	+		1981-2017	partial	
Denmark	14700–14800	4	2017	partial	+	60 to 134	2006-2017	complete	+	916 to 2078	1982-2017	complete	
DK: Faroe Is	250–600	<1	2019	expert	?				?				
Estonia	600–800	<1	2013-2017	expert	0	23 to 34	2006-2017	expert	-	-29 to -27	1980-2017	expert	
Finland	3500–10100	2	2013-2018	partial	0	-14 to 48	2007-2018	complete	+	360 to 1169	1980-2018	partial	
France	210–230	<1	2015-2015	partial	+	81 to 111	2007-2015	partial	+	2090 to 2140	1980-2015	partial	
Georgia	1–9	<1	2013-2017	partial	?			deficient	?				
Germany	42000–59000	15	2016-2016	expert	+		2004-2016	expert	+		1985-2016	expert	
Greece	20–40	<1	2013-2018	complete	0		2007-2018	complete	0		1980-2018	complete	
Hungary	3300–4800	1	2013-2018	partial	+	45 to 57	2007-2018	partial	+	500 to 560	1980-2018	partial	
Iceland	22000–30000	8	2018	complete	-		2006-2018	complete	-		1980-2018	complete	
Rep. Ireland	1000–2000	100	2013-2018	expert	+		2000-2018	expert	+		1986-2018	deficient	non-native populations
Italy	310–460	<1	2010-2015	expert	+	10 to 35	2004-2007	expert	+	30900 to 45900	1989-2018	expert	
Latvia	200–500	<1	2013-2017	partial	+	79 to 89	2012-2017	partial	+	497 to 584	1991-2017	partial	
Lithuania	700–900	<1	2013-2018	partial	+	125 to 133	2013-2018	partial	+	330 to 470	1980-2018	partial	
Moldova	16–30	<1	2014-2017	partial	+		2007-2018	partial	0		1990-2018	expert	
Netherlands	67000–111000	26	2013-2015	complete	+	148 to 187	2006-2017	complete	+	253356 to 284863	1980-2017	complete	
Norway	20000–25500	7	2013-2018	partial	+	10 to 60	2013-2018	partial	+	35 to 80	1980-2018	partial	
NO: Svalbard	3	<1	2015-2018	deficient	F		2013-2018	expert	F		1980-2018	partial	
Poland	6000–9000	2	2013-2018	expert	+	47 to 254	2007-2018	complete	+	200 to 400	1980-2018	expert	
Romania	1000–5000	<1	2013-2018	expert	?		2007-2018	deficient	?		1980-2018	deficient	
Russia	8000–12000	3	2008-2018	partial	-	0	2010-2018	partial	-	-1 to 0	1980-2018	partial	
Serbia	210–330	<1	2013-2018	complete	+	30 to 49	2007-2018	complete	+	80 to 100	1980-2018	complete	

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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	50–150	<1	2013-2018	partial	+	10 to 20	2007-2018	expert	+	100 to 300	1980-2018	expert	
Slovenia	3–10	<1	2013-2018	complete	+	50 to 150	2007-2018	complete	+	200 to 900	1980-2018	complete	
Sweden	32000–51000	12	2013-2018	partial	0	0 to 50	2007-2018	partial	+	1700 to 2300	1980-2018	partial	
Switzerland	45–60	<1	2013–2016	complete	+		2007-2018	complete	+		1990-2018	complete	
Turkey	100–300	<1	2002-2012	partial	?		2008-2019	deficient	?		1980-2013	deficient	
Ukraine	2100–2400	<1	2010-2018	partial	-		2010-2018	partial	F		1980-2018	partial	
United Kingdom	46900–47000	14	2016	partial	+		2004-2016	complete	+		1980-2016	complete	
EU28	224000–326000	82											
Europe	277000–398000	100											
Europe	1000–2000	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.

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Table 2. Reported national wintering population sizes and trends in Europe¹. 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	0–12	<1	2007-2018	complete	-	-100 to -86	2007-2018	complete	-	-85 to 0	1980-2018	complete	
Armenia	50–150	<1	2013-2018	partial	-	-15 to -5	2007-2018	partial	?		2003-2018	deficient	
Austria	11000–16000	1	2013-2016	complete	-		2007-2018	complete	+		1981-2018	complete	
Azerbaijan	10000–25000	1	1996-2019	partial	?		2010-2019	partial	?		1980-2019	expert	
Belarus	10	<1	2013-2018	partial	0	-10 to 10	2000-2012	partial	?				
Belgium	13000–27000	2	2013-2018	complete	?	-13 to 102	2007-2018	complete	+	292 to 835	1992-2018	complete	
Bosnia & HG	300–1000	<1	2015-2018	complete	?		2007-2018	deficient	?		1980-2018	deficient	
Bulgaria	50–700	<1	2013-2018	complete	F		2000-2018	complete	F		1980-2018	complete	
Croatia	1500–5000	<1	2016-2018	expert	F		2007-2018	expert	?		1980-2013	deficient	
Czechia	4000–10500	<1	2015-2019	complete	+		2008-2019	complete	+		1980-2019	complete	
Denmark	96800–96900	8	2017-2017	complete	F		2006-2017	complete	+		1981-2017	complete	
DK: Faroe Is	200–2000	<1	2018		?				?				
France	14200–19200	1	2013-2018	complete	0	0 to 2	2007-2017	complete	+	148 to 193	1980-2017	complete	
Georgia		<1	2012	deficient	?				?		2002-2019		
Germany	160000	12	2011-2016	complete	+	90 to 113	2003-2016	complete	+	4559 to 6674	1980-2016	complete	
Greece	28–230	<1	2013-2018	complete	?		2007-2018	deficient	0		1980-2018	partial	
Hungary	20000–45000	2	2015-2018	partial	+	13 to 36	2007-2018	complete	+	478 to 594	1988-2018	complete	
Iceland	4000	<1	2018	partial	+		2002-2014	partial	+		1980-2014	partial	
Rep. Ireland	1900–2000	<1	2011-2016	partial	-		2004-2018	partial	+		1986-2018	partial	
Italy	19100–20600	2	2013-2015	partial	+	30 to 75	2009-2015	partial	+	2210 to 2380	1991-2015	partial	
North Macedonia	0–200	<1	2013-2018	expert	0		2010-2019	complete	0		1988-2018	complete	
Moldova	8000–12000	<1	2018-2019	partial	F		2007-2018	partial	0		1990-2018	expert	
Montenegro	20–60	<1	2013-2018	expert	0		2007-2018	expert	?				
Netherlands	492000–548000	40	2013-2017	complete	+	22 to 79	2006-2017	complete	+	2243 to 3299	1981-2017	complete	
Norway	500–2000	<1	2010-2018	partial	F		2013-2018	deficient	F		1980-2018	deficient	
Poland	5000–9000	<1	2013-2018	complete	?	-22 to 121	2013-2018	complete	?		1980-2018	deficient	
Portugal	1600–5200	<1	2013-2018	complete	-	-30 to -16	2007-2018	complete	?		1988-2018	partial	
Romania	4500–12600	<1	2013-2018	complete	?	-43 to 21	2013-2018	complete	-	-62 to -24	1990-2018	complete	
Serbia	3000–45000	<1	2013-2018	complete	+	50 to 79	2013-2018	complete	+	50 to 79	1980-2018	complete	
Slovakia	1000–8000	<1	2013-2018	complete	+	0 to 100	2007-2018	complete	+	50 to 200	1980-2018	complete	
Slovenia	60–1800	<1	2013-2018	complete	+		2007-2018	complete	+	20 to 160	1980-2018	expert	

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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	
Spain	210000–239000	17	2013-2018	partial	-		2007-2018	complete	+		1980-2018	complete	
Sweden	20000–46000	2	2013-2018	complete	0	-10 to 10	2007-2018	complete	+		1980-2018	complete	
Switzerland	740–1300	<1	2015-2019	complete	+	107 to 132	2008-2019	complete	+	2801 to 3195	1980-2019	complete	
Turkey	140–880	<1	2013-2019	complete	?		2008-2019	deficient	?		1980-2019	deficient	
Ukraine	800–6000	<1	2014-2017	partial	-		2007-2018	partial	F		1980-2018	partial	
United Kingdom	91000	7	2012-2016	complete	0		2005-2016	complete	0		1980-2016	complete	
EU28	1160000–1350000	95											
Europe	1190000–1470000	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>.

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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 ($\geq 50\%$) | ↓ Large decrease ($\geq 50\%$) |
| ↑ Moderate increase (20–49%) | ↓ Moderate decrease (20–49%) |
| ↑ Small increase ($< 20\%$) | ↓ Small decrease ($< 20\%$) |
| ↑ Increase of unknown magnitude | ↓ Decrease of unknown magnitude |
| ■ Stable or fluctuating | |
| □ Unknown | |
| ○ Present (no population or trend data) | |
| × Extinct since 1980 | |

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: $\geq 10\%$ of the European population
- ↑ Medium: 1–9% of the European population
- ↑ Small: $< 1\%$ of the European population

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

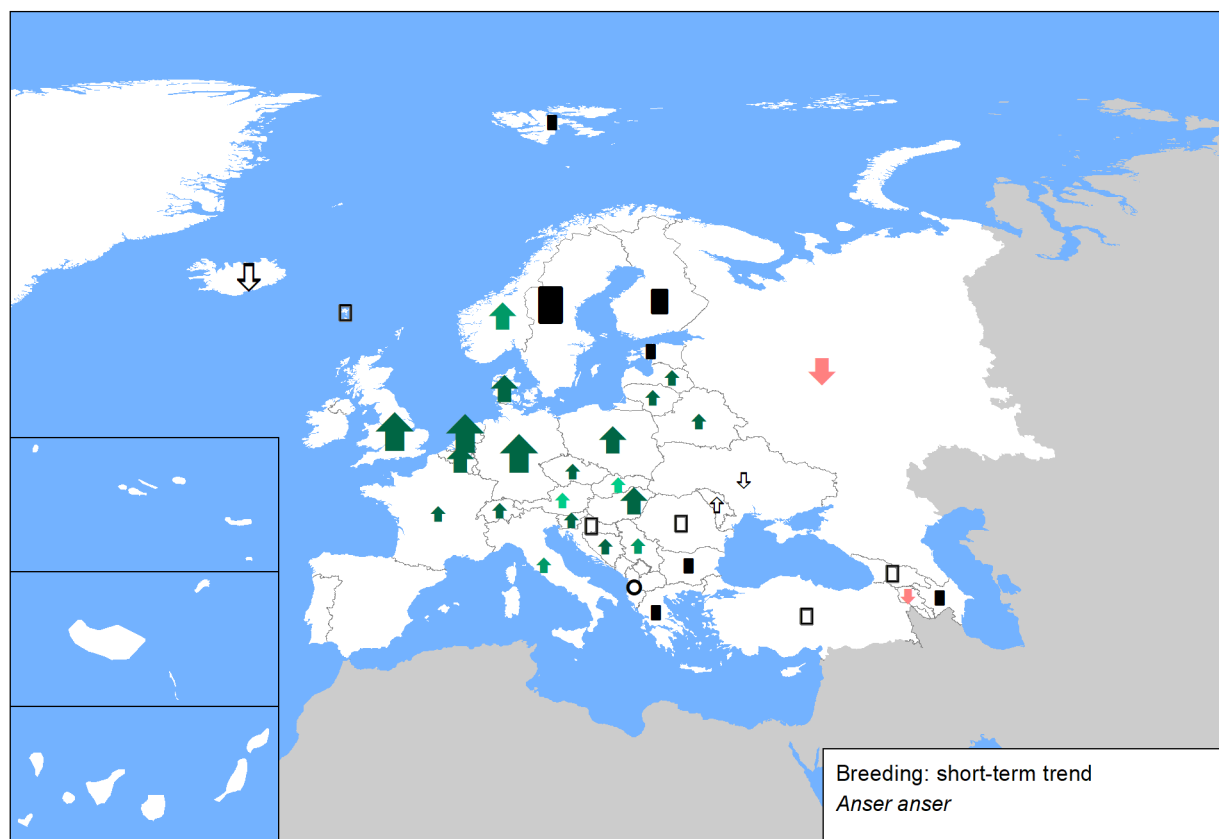


Figure 2. Breeding population sizes and long-term trends across Europe.

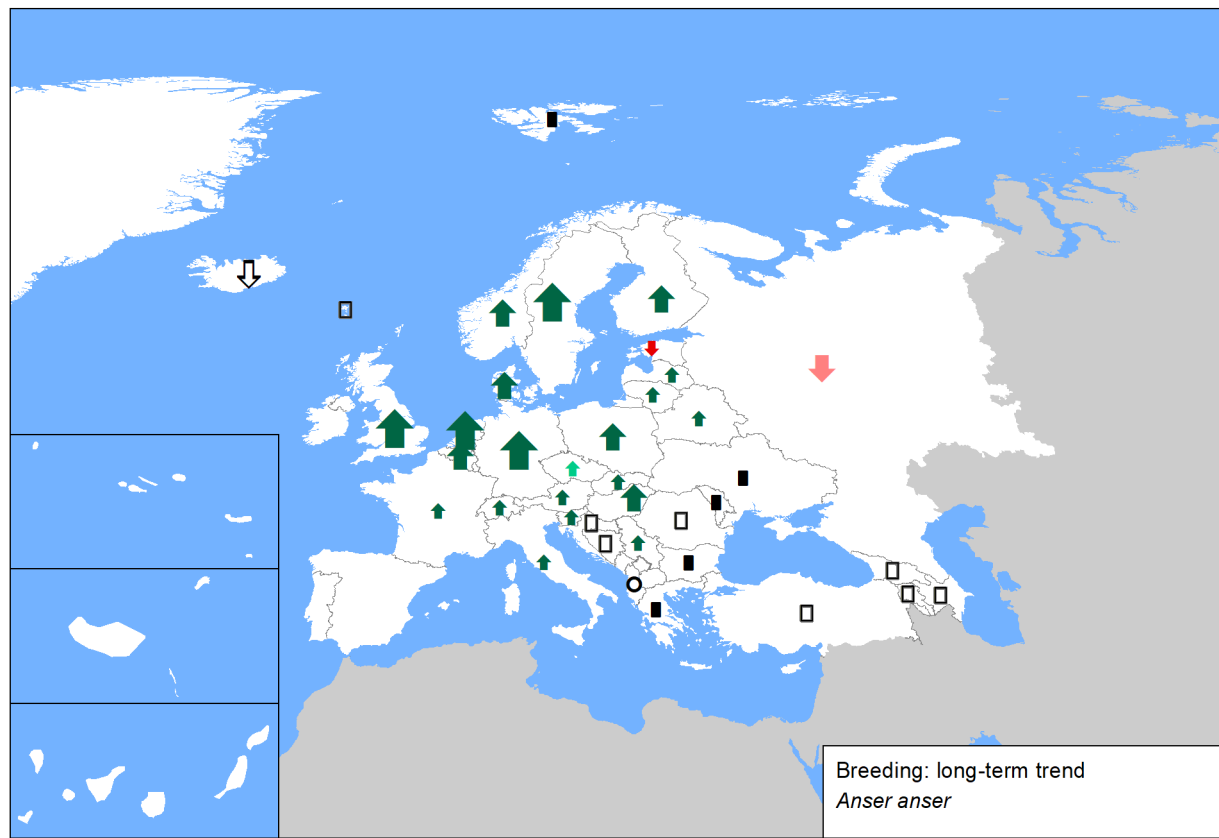


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

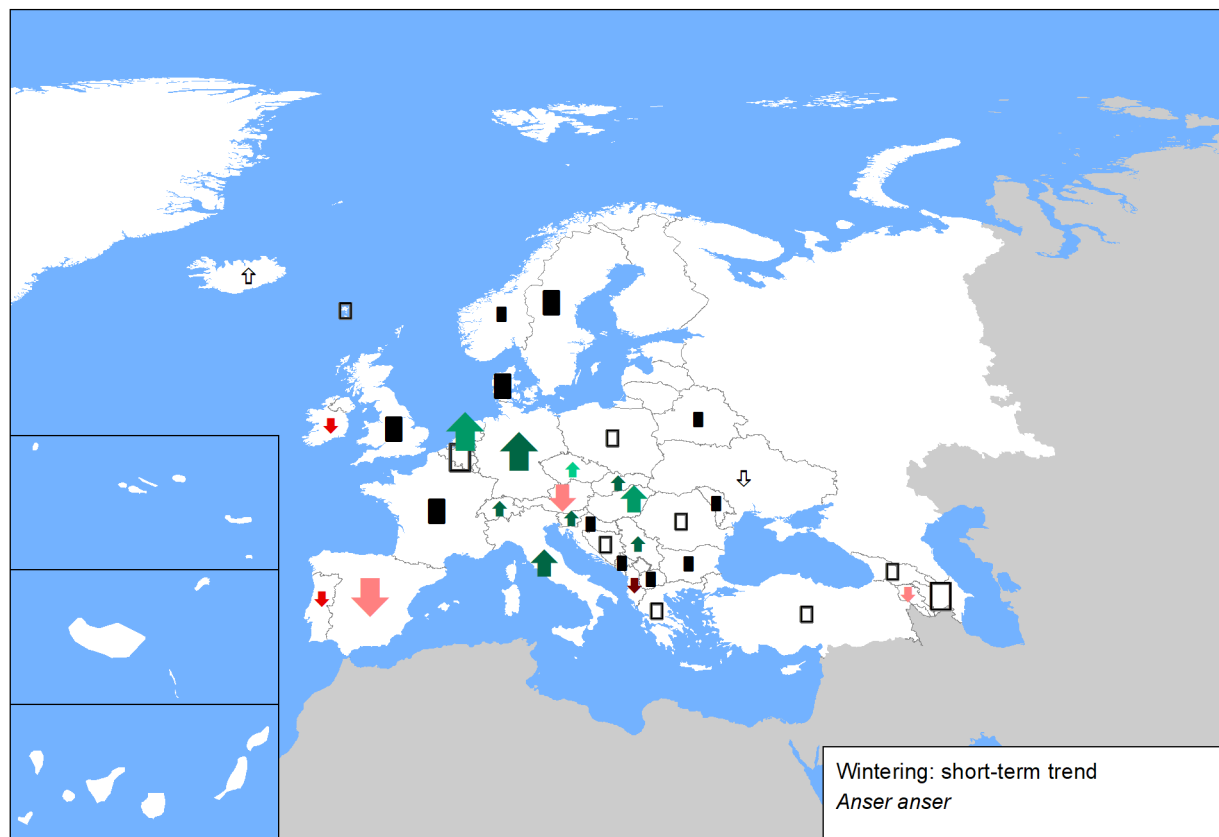
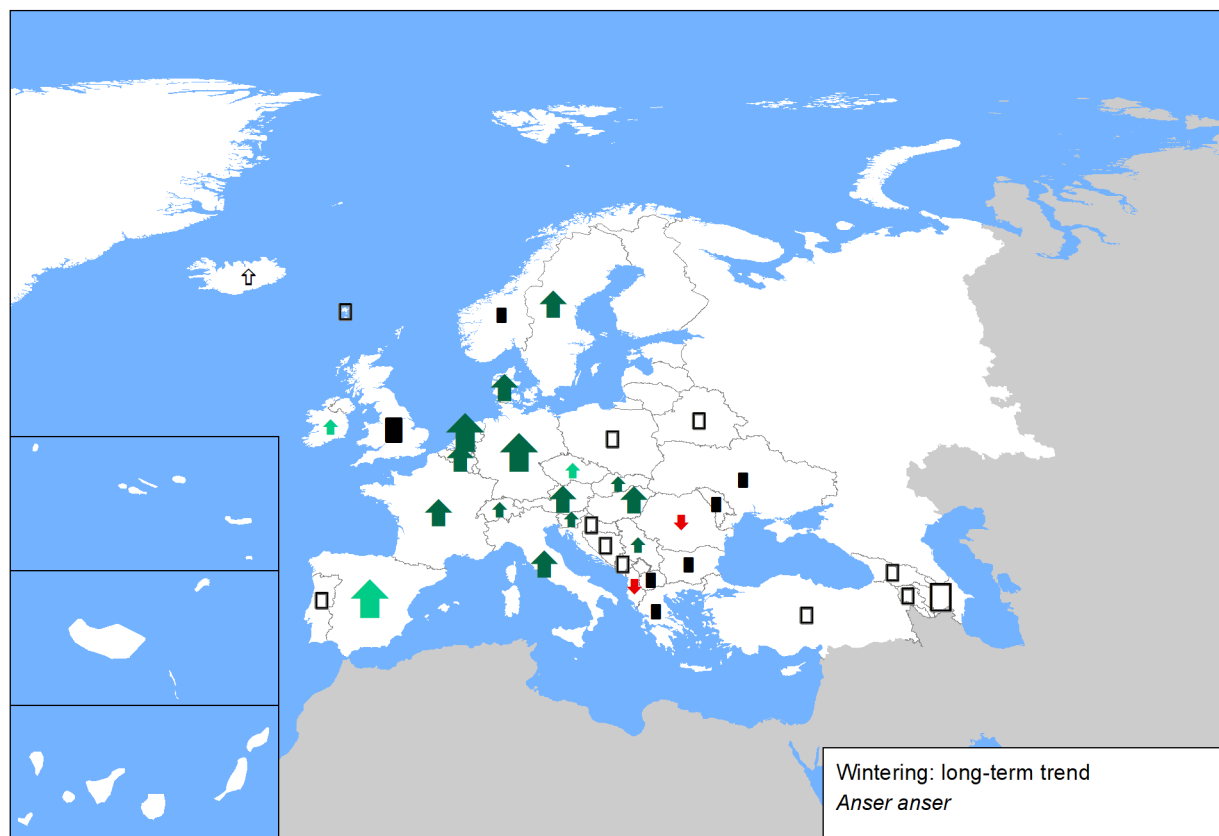


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



Sources

Albania

Breeding population size: Bino & Xeka 2020 in EBBA 2
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: BirdLife Austria, unpublished data
Winter population size: BirdLife Austria, unpublished data from www.ornitho.at , BirdLife Austria, unpublished data from goose monitoring in the Neusiedler See area
Winter short-term trend: BirdLife Austria, unpublished data from goose monitoring in the Neusiedler See area
Winter long-term trend: BirdLife Austria, unpublished data from goose monitoring in the Neusiedler See area

Azerbaijan

Breeding population size: BirdLife International 2004
Breeding short-term trend: AOS data base
Breeding long-term trend: AOS Data Base
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: 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

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)
Breeding long-term trend: EBBA2 data
Winter population size: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)

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Bosnia and Herzegovina

Winter short-term trend: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)
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; BSPB IBA monitoring BSPB/BirdLife Bulgaria National Ornithological Database
Breeding long-term trend: Iankov, P. (ed) 2007. Breeding Bird Atlas of Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB
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
Winter short-term trend: 1/ IWC counts in Bulgaria; National Art. 12 reporting database 2013-2018; 2/ BSPB/BirdLife Bulgaria IBA monitoring programme 3/ BSPB/BirdLife Bulgaria GIS related ornithological database 4/ Kostadinova, I & S. Dereliev. 2001. Results from Mid-winter Counts in Bulgaria. BSPB Conservation Series, Book 3.; Michev, T., L. Profirov. 2003. Midwinter Numbers of Waterbirds in Bulgaria (1977-2001). Results from 25 years of mid-winter count carried out at the most important Bulgarian Wetlands. Publ. House Pensoft, Sofia, 160 pp.;
Winter long-term trend: 1/ IWC counts in Bulgaria 2/ BSPB/BirdLife Bulgaria IBA monitoring programme 3/ BSPB/BirdLife Bulgaria GIS related ornithological database 4/ Kostadinova, I & S. Dereliev. 2001. Results from Mid-winter Counts in Bulgaria. BSPB Conservation Series, Book 3.

Croatia

Breeding population size: Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama. Tutiš, V., Kralj, J., Radović, D., Čiković, D., Barišić, S. (ur.) (2013): Crvena knjiga ptica Hrvatske. Ministarstvo zaštite okoliša i prirode, Državni zavod za zaštitu prirode, Zagreb, 258 str
Breeding short-term trend: Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
Breeding long-term trend: Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
Winter population size: Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
Winter short-term trend: BirdLife International 2015: European Red List of Birds. Luxembourg: Office for Official Publications of the European Communities.). Http://datazone.birdlife.org/info/euroredlist
Winter long-term trend: no data available

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, Podhrázký 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.

Anser anser (Greylag Goose)

Czechia

Winter short-term trend: 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 individual species trends in numbers was 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), Musilová et al. (2015), Musilová et al. (2018 a, b). 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 2*: 42–59. Gilissen N, Haanstra L, Delany S, Boere G, Hagemeyer 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, 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 (2018a) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. *Ibis*: 160: 582–596. Musilová Z, Musil P, Zouhar J, Adam M, Bejček V (2018b) Importance of Natura 2000 sites for wintering waterbirds: Low preference, species' distribution changes and carrying capacity of Natura 2000 could fail to protect the species. *Biological Conservation* 228: 79–88. Musilová Z, Musil P, Zouhar J, Bejček V, Štašný 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. Musilová Z, Musil P, Zouhar J, Romportl D (2015) Long-term trends, total numbers and species richness of increasing waterbird populations at sites on the edge of their winter range: cold-weather refuge sites are more important than protected sites. *J Ornithol*: 1–10. Pannekoek J, Van Strien AJ (2005) TRIM 3 Manual (Trends and Indices for Monitoring Data). Statistics Netherlands, Voorburg, The Netherlands. Wetlands International (2006) Waterbird population estimates. Fourth Edition. Wetlands International, Wageningen, The Netherlands. Wetlands International (2019) Waterbird Population Estimates. Available at: wpe.wetlands.org (accessed 10 March 2019).

Winter long-term trend: 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 individual species trends in numbers was 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), Musilová et al. (2015), Musilová et al. (2018 a, b). 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 2*: 42–59. Gilissen N, Haanstra L, Delany S, Boere G, Hagemeyer 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, 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 (2018a) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. *Ibis*: 160: 582–596. Musilová Z, Musil P, Zouhar J, Adam M, Bejček V (2018b) Importance of Natura 2000 sites for wintering waterbirds: Low preference, species' distribution changes and carrying capacity of Natura 2000 could fail to protect the species. *Biological Conservation* 228: 79–88. Musilová Z, Musil P, Zouhar J, Bejček V, Štašný 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. Musilová Z, Musil P, Zouhar J, Romportl D (2015) Long-term trends, total numbers and species richness of increasing waterbird populations at sites on the edge of their winter range: cold-weather refuge sites are more important than protected sites. *J Ornithol*: 1–10. Pannekoek J, Van Strien AJ (2005) TRIM 3 Manual (Trends and Indices for Monitoring Data). Statistics Netherlands, Voorburg, The Netherlands. Wetlands International (2006) Waterbird population estimates. Fourth Edition. Wetlands International, Wageningen, The Netherlands. Wetlands International (2019) Waterbird Population Estimates. Available at: wpe.wetlands.org (accessed 10 March 2019).

Denmark

Breeding population size: Charlotte M. Moshøj, Daniel Palm Eskildsen, Michael Fink Jørgensen & Thomas Vikstrøm, (2018): Overvågning af de almindelige fuglearter i Danmark 1975-2017 & Mandrup, E. 1997, Hvor mange fugle yngler i Danmark, *Dansk Ornitologisk Tidsskrift*, nr 3, 1997

Breeding short-term trend: Charlotte M. Moshøj, Daniel Palm Eskildsen, Michael Fink Jørgensen & Thomas Vikstrøm, (2018): Overvågning af de almindelige fuglearter i Danmark 1975-2017

Breeding long-term trend: Charlotte M. Moshøj, Daniel Palm Eskildsen, Michael Fink Jørgensen & Thomas Vikstrøm, (2018): Overvågning af de almindelige fuglearter i Danmark 1975-2017

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/>

Winter short-term trend: 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/>

Winter long-term trend: 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/>

DK: Faroe Is

Estonia

Breeding population size: [1] Estonian Working Group on Bird Status and Numbers [2] Linnulade inventuurid 2012-2018. Avaldamata.

Breeding short-term trend: [1] Estonian Working Group on Bird Status and Numbers [2] Breeding bird survey of coastal islands http://seire.keskkonnainfo.ee/index.php?option=com_content&view=article&id=2036&Itemid=349

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

Finland

Breeding population size: Hilden & Hario Muuttuva saaristolinnusto (1400 pairs in the turn of 80's to 90's) and extrapolation from there so that TRIM index estimate for each year from 2013 to 2018 was divided by the turn of 80's to 90's average, to get a multiplier with which the 80's-90's estimate was multiplied. Minimum and maximum are the smallest and largest of the annual estimates during the period and best single value is the mean of the estimates for the six years. Lehtikoinen, A. , Below, A., Jukarainen, A., Laaksonen, T., Lehtiniemi, T., Mikkola-Roos, M., Pessa, J., Rajasärkkä, A., Rusanen, P., Sirkiä, P., Tiainen, J. & Valkama, J. 2019: Suomen lintujen pesimäkantojen koot. – Linnut-vuosikirja 2018: 38-45.

Breeding short-term trend: Finnish archipelago bird census (organized by Finnish Environment Institute SYKE, Metsähallitus and Natural Resources Institute Finland Luke) Below, A., Mikkola-Roos, M., Kurvinen, L. & Lehtikoinen, A. 2019: Saaristolintukantojen kehitys vuosina 1980–2018. – Linnut-vuosikirja 2018: 56-67.

Anser anser (Greylag Goose)

Finland

Breeding long-term trend: Finnish archipelago bird census (organized by Finnish Environment Institute SYKE, Metsähallitus and Natural Resources Institute Finland Luke) Below, A., Mikkola-Roos, M., Kurvinen, L. & Lehtikainen, A. 2019: Saaristolintukantojen kehitys vuosina 1980–2018. – Linnut-vuosikirja 2018: 56-67.

France

Breeding population size: Deceuncinck, B. & Schricke, V. 2015. Oie cendrée Anser anser. In Issa N & Muller Y (coord.) Atlas des oiseaux de France métropolitaine. Nidification et présence hivernale, Delachaux & Niestlé 86-89

Breeding short-term trend: Deceuncinck, B. & Schricke, V. 2015. Oie cendrée Anser anser. In Issa N & Muller Y (coord.) Atlas des oiseaux de France métropolitaine. Nidification et présence hivernale, Delachaux & Niestlé 86-89

Breeding long-term trend: Deceuncinck, B. & Schricke, V. 2015. Oie cendrée Anser anser. In Issa N & Muller Y (coord.) Atlas des oiseaux de France métropolitaine. Nidification et présence hivernale, Delachaux & Niestlé 86-89

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

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

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: EBBA Georgia, prepared by Sabuko-Society for nature conservation, Ilia state university, NGO "psovi".

Winter population size: BirdLife International 2004

Germany

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

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

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

Winter population size: Dachverband Deutscher Avifaunisten e.V. (<http://www.dda-web.de>)

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

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

Greece

Breeding population size: 1) Λεγάκις, Α. & Μαραγκού, Π. (επιμ.). 2009. Το Κόκκινο Βιβλίο των Απειλούμενων Ζώων της Ελλάδας. Ελληνική Ζωολογική Εταιρεία, Αθήνα, 528 σελ. 2) Δημαλέξης, Τ., Καστρίτης, Θ., Γρίβας, Κ., Μανωλόπουλος, Α., Καρδακάρη, Ν., Κακαλής, Λ., Ξηρουχάκης, Σ., Τσαϊτουρίδης, Χ., Παπαζογλου, C. & Barov, B. 2009. Προσδιορισμός συμβατών δραστηριοτήτων σε σχέση με τα είδη χαρακτηρισμού των Ζωνών Ειδικής Προστασίας της ορνιθοπανίδας. Παραδοτέο 8. Οδηγός οικολογικών απαιτήσεων, απειλών και ενδεδειγμένων μέτρων για τα είδη χαρακτηρισμού. 3) Βλάχος Χ., Μπίρτσας Π., Θωμάϊδης Χ., Χατζηνίκος Ε., Μποντζώρλος Β., Μπραζιώτης Σ., Κόντος Κ., Βλαχάκη Δ., Δεδουσοπούλου Ε., Κιούσης Δ., Ξένος Α., Στεφάνου Λ.Μ., Κασάμπας Δ., και Μελικώκη Κ. (Συντονιστές έκδοσης). 2015. Γ' Φάση της Μελέτης 9 «Εποπτεία και Αξιολόγηση της Κατάστασης Διατήρησης Ειδών Ορνιθοπανίδας στην Ελλάδα» ΥΠΑΠΕΝ, Αθήνα, Σύμπραξη Γραφείων Μελετών «Φ.ΦΑΣΟΥΛΑΣ-Ν.ΜΑΝΤΖΙΟΣ» Ε.Ε. – ΡΟΔΟΥΛΑ ΚΩΝΣΤΑΝΤΙΝΙΔΟΥ ΤΟΥ ΓΕΩΡΓΙΟΥ – "ΑΘ.ΤΖΑΚΟΠΟΥΛΟΣ ΚΑΙ ΣΙΑ" Ε.Ε.». Θεσσαλονίκη. 4) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife International. ISBN 978-1-912086-00-9

Breeding short-term trend: 1) BirdLife International (2004) Birds in Europe: Population estimates, trends and conservation status. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 12). 2) Λεγάκις, Α. & Μαραγκού, Π. (επιμ.). 2009. Το Κόκκινο Βιβλίο των Απειλούμενων Ζώων της Ελλάδας. Ελληνική Ζωολογική Εταιρεία, Αθήνα, 528 σελ. 3) Δημαλέξης, Τ., Καστρίτης, Θ., Γρίβας, Κ., Μανωλόπουλος, Α., Καρδακάρη, Ν., Κακαλής, Λ., Ξηρουχάκης, Σ., Τσαϊτουρίδης, Χ., Παπαζογλου, C. & Barov, B. 2009. Προσδιορισμός συμβατών δραστηριοτήτων σε σχέση με τα είδη χαρακτηρισμού των Ζωνών Ειδικής Προστασίας της ορνιθοπανίδας. Παραδοτέο 8. Οδηγός οικολογικών απαιτήσεων, απειλών και ενδεδειγμένων μέτρων για τα είδη χαρακτηρισμού. 4) Natura Viewer (<http://natura2000.eea.europa.eu/#>). 5) Πορτόλου, Δ., Μπουρδάκης, Σ., Βλάχος, Χ., Καστρίτης, Θ. & Δημαλέξης, Τ. (επιμ.). 2009. Οι Σημαντικές Περιοχές για τα Πουλιά της Ελλάδας: Περιοχές Προτεραιότητας για τη Διατήρηση της Βιοποικιλότητας. Ελληνική Ορνιθολογική Εταιρεία, Αθήνα. 6) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife International. ISBN 978-1-912086-00-9

Breeding long-term trend: BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife International. ISBN 978-1-912086-00-9

Winter population size: 1) Midwinter Counts Database (1967 - 2019), Hellenic Ornithological Society 2) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife International. ISBN 978-1-912086-00-9, 3) Portolou, D., Bourdakakis, S., Vlachos, C., Kastiritis, T., and Dimalexis. T. (eds.) 2009. Important Bird Areas of Greece: Priority sites for conservation. Hellenic Ornithological Society. Athens.

Winter short-term trend: no data

Winter long-term trend: 1) Handrinos, G., & Akriotis, T., (1997) The birds of Greece. C. Helm, A & C Black, London. 2) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife International. ISBN 978-1-912086-00-9. 3) Λεγάκις, Α. & Μαραγκού, Π. (επιμ.). 2009. Το Κόκκινο Βιβλίο των Απειλούμενων Ζώων της Ελλάδας. Ελληνική Ζωολογική Εταιρεία, Αθήνα, 528 σελ. 4) Natura Viewer (<http://natura2000.eea.europa.eu/#>). 5) Δημαλέξης, Τ., Καστρίτης, Θ., Γρίβας, Κ., Μανωλόπουλος, Α., Καρδακάρη, Ν., Κακαλής, Λ., Ξηρουχάκης, Σ., Τσαϊτουρίδης, Χ., Παπαζογλου, C. & Barov, B. 2009. Προσδιορισμός συμβατών δραστηριοτήτων σε σχέση με τα είδη χαρακτηρισμού των Ζωνών Ειδικής Προστασίας της ορνιθοπανίδας. Παραδοτέο 8. Οδηγός οικολογικών απαιτήσεων, απειλών και ενδεδειγμένων μέτρων για τα είδη χαρακτηρισμού. 6) Πορτόλου, Δ., Μπουρδάκης, Σ., Βλάχος, Χ., Καστρίτης, Θ. & Δημαλέξης, Τ. (επιμ.). 2009. Οι Σημαντικές Περιοχές για τα Πουλιά της Ελλάδας: Περιοχές Προτεραιότητας για τη Διατήρηση της Βιοποικιλότητας. Ελληνική Ορνιθολογική Εταιρεία, Αθήνα. 7) Βλάχος Χ., Μπίρτσας Π., Θωμάϊδης Χ., Χατζηνίκος Ε., Μποντζώρλος Β., Μπραζιώτης Σ., Κόντος Κ., Βλαχάκη Δ., Δεδουσοπούλου Ε., Κιούσης Δ., Ξένος Α., Στεφάνου Λ.Μ., Κασάμπας Δ., και Μελικώκη Κ. (Συντονιστές έκδοσης). 2015. Γ' Φάση της Μελέτης 9 «Εποπτεία και Αξιολόγηση της Κατάστασης Διατήρησης Ειδών Ορνιθοπανίδας στην Ελλάδα» ΥΠΑΠΕΝ, Αθήνα, Σύμπραξη Γραφείων Μελετών «Φ.ΦΑΣΟΥΛΑΣ-Ν.ΜΑΝΤΖΙΟΣ» Ε.Ε. – ΡΟΔΟΥΛΑ ΚΩΝΣΤΑΝΤΙΝΙΔΟΥ ΤΟΥ ΓΕΩΡΓΙΟΥ – "ΑΘ.ΤΖΑΚΟΠΟΥΛΟΣ ΚΑΙ ΣΙΑ" Ε.Ε.», Θεσσαλονίκη.

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

Anser anser (Greylag Goose)

Hungary

Breeding short-term trend: Expert opinions MME Nomenclator Bizottság (2008): Magyarország madarainak névjegyzéke. Nomenclator avium Hungariae. Magyar Madártani és Természetvédelmi Egyesület, Budapest. P. 278 National Park Directorates' databases
Breeding long-term trend: Expert opinions Magyar, G., Hadarics, T., Waliczky, Z., Schmidt, A., Nagy, T. & Bankovics, A. (1998): Nomenclator avium Hungariae. Magyarország madarainak névjegyzéke. KTM Természetvédelmi Hivatal Madártani Intézete – Magyar Madártani és Természetvédelmi Egyesület – Winter Fair, Budapest – Szeged. P. 202. MME Nomenclator Bizottság (2008): Magyarország madarainak névjegyzéke. Nomenclator avium Hungariae. Magyar Madártani és Természetvédelmi Egyesület, Budapest. P. 278 National Park Directorates' databases
Winter population size: Expert opinions Faragó S. (2017): Magyar Vízivad Közlemény 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
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

Iceland

Breeding population size: Icelandic Institute of Natural History, estimate; Brides, K, C. Mitchell & S. N.V. Auhage. 2019. Status and distribution of Icelandic-breeding geese: results of the 2018 international census. Wildfowl & Wetlands Trust Report, Slimbridge. 18pp.
Breeding short-term trend: Brides, K, C. Mitchell & S. N.V. Auhage. 2019. Status and distribution of Icelandic-breeding geese: results of the 2018 international census. Wildfowl & Wetlands Trust Report, Slimbridge. 18pp.
Breeding long-term trend: Brides, K, C. Mitchell & S. N.V. Auhage. 2019. Status and distribution of Icelandic-breeding geese: results of the 2018 international census. Wildfowl & Wetlands Trust Report, Slimbridge. 18pp.
Winter population size: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur ; Icelandic Institute of Natural History, unpubl.data.
Winter short-term trend: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur ; Icelandic Institute of Natural History, unpubl.data.
Winter long-term trend: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur ; Icelandic Institute of Natural History, unpubl.data.

Republic of Ireland

Winter population size: Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G. & Tierney, T. D. (2018) Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16. Irish Birds 11, 1-12.
Winter short-term trend: Population change based on a comparison of the 2018 population estimate (Burke et al. 2018) with population estimate from 2004 (Crowe et al. 2008). Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G. & Tierney, T. D. (2018) Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16. Irish Birds 11, 1-12. Crowe, O., Austin, G. E., Colhoun, K., Cranswick, P., Kershaw, M. & Musgrove, A. J. (2008) Estimates and trends of waterbird numbers wintering in Ireland, 1994/95-2003/04. Bird Study 55, 66–77.
Winter long-term trend: Comparison of modelled All-Ireland population estimate from Burke et al. 2018 with all-Ireland census of 1986 (Merne, 1986). Merne, O. 1986. Greylag geese in Ireland. Irish Birds 3 207-214. All-Ireland census. See: 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

Republic of Ireland: non-native populations

Breeding population size: Expert opinion: O. Crowe.
Breeding short-term trend: See 3.3.
Breeding long-term trend: See 3.3.

Italy

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

Latvia

Breeding population size: O. Keiss, J. Lipsbergs, R. Silins, A. Stipniece. 2018. Development and status of Greylag Goose <i>Anser anser</i> population in Latvia
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. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)
--

Anser anser (Greylag Goose)

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. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)
Breeding long-term trend: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) BirdLife International/European Bird Census Council. 2000. European bird populations: estimates and trends. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 10). Kurlavičius, P. (ed.) 2006. Lietuvos perinčių paukščių atlasas. Kaunas: „Lututė“, 256 p. Rašomavičius, V. (red.) 2007. Lietuvos raudonoji knyga. Kaunas: „Lututė“, 800 p. (Red Data Book of Lithuania, 2007) 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.

North Macedonia

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, Korchia, Albania.; Micevski, B. (1996). Ohrid Lake winter ornithofauna (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., Veleviski, 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

Winter population size: IWC reports (2013-2018): Dubak, Vešović, N., Jovičević, M., Vizi O., Vizi, A.
--

Netherlands

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

Norway

Breeding population size: (a) Norwegian Institute for Nature Research (NINA) (b) mapping and monitoring carried out by BirdLife Norway in selected areas
Breeding short-term trend: Arne Follestad (Norwegian Institute for Nature Research) pers. comm.
Breeding long-term trend: Arne Follestad (Norwegian Institute for Nature Research) pers. comm.
Winter population size: Artsobservasjoner www.artsobservasjoner.no
Winter short-term trend: Artsobservasjoner www.artsobservasjoner.no
Winter long-term trend: Artsobservasjoner www.artsobservasjoner.no

NO: Svalbard

Breeding population size: Artsobservasjoner (www.artsobservasjoner.no)
Breeding short-term trend: Artsobservasjoner (www.artsobservasjoner.no)
Breeding long-term trend: Artsobservasjoner (www.artsobservasjoner.no)

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; State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MPM - Wetland Bird Survey)
Breeding short-term trend: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MPM)

Anser anser (Greylag Goose)

Poland

Breeding long-term trend: Gromadzki M., Wieloch M. 1983. Distribution and number of Greylag Goose <i>Anser anser</i> in Poland in the years 1977-1979. <i>Acta Orn.</i> 19: 155-178; Tucker G.M., Heath M.F. 1994. <i>Birds in Europe: their conservation status.</i> BirdLife International, Cambridge, UK.;
Winter population size: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MNG – Geese Survey)
Winter short-term trend: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MNG)
Winter long-term trend: Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland

Portugal

Winter population size: Programa Nacional de Monitorização de Aves Aquáticas Invernantes
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: Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) 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: Todorov, E. (2020). National monitoring scheme of wintering geese in South-east Romania. Retrieved June 19, 2020 from Romanian Ornithological Society electronic database, http://pasaridinromania.sor.ro/ .
Winter short-term trend: Birdlife International (2004). <i>Birds in Europe: population estimates, trends and conservation status.</i> Cambridge, UK: Birdlife International. Conservation series, No.12 Birdlife International/European Bird Census Council (2000). <i>European birds population: estimates and trends.</i> Cambridge, UK: Birdlife International. Conservation series, No.10 Tucker, G. M. & Heath, M.F. (1994) <i>Birds in Europe: their conservation status.</i> Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 3).
Winter long-term trend: Birdlife International (2004). <i>Birds in Europe: population estimates, trends and conservation status.</i> Cambridge, UK: Birdlife International. Conservation series, No.12 Birdlife International/European Bird Census Council (2000). <i>European birds population: estimates and trends.</i> Cambridge, UK: Birdlife International. Conservation series, No.10 Tucker, G. M. & Heath, M.F. (1994) <i>Birds in Europe: their conservation status.</i> Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 3).

Russia

Breeding population size: Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia
Breeding short-term trend: Rusanov 2011; Belik 2013; Reutskiy 2014
Breeding long-term trend: Belik et al. 2003; Rusanov 2011; Belik 2013; Reutskiy 2014; Rozenfeld & Mischenko 2018

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. <i>Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013.</i> Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.
Breeding short-term trend: 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. <i>Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013.</i> Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.
Breeding long-term trend: 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. <i>Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013.</i> Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.
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.
Winter population size: Coordinatory group for reporting 2019. Slabeyová K., Ridzoň J., Karaska D., Topercer J. & Darolová A. 2011: <i>Správa zo zimného sčítania vodného vtáctva na Slovensku 2009/10, SOS/BirdLife Slovensko, Bratislava, 160 s.</i>
Winter short-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Slabeyová K., Ridzoň J., Karaska D., Topercer J. & Darolová A. 2011: <i>Správa zo zimného sčítania vodného vtáctva na Slovensku 2009/10, SOS/BirdLife Slovensko, Bratislava, 160 s.</i> http://www.vtaky.sk/
Winter long-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. http://www.vtaky.sk/

Slovenia

Breeding population size: Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): <i>Atlas ptic Slovenije. Popis gnezdičk 2002–2017.</i> – DOPPS, Ljubljana.
Breeding short-term trend: Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): <i>Atlas ptic Slovenije. Popis gnezdičk 2002–2017.</i> – DOPPS, Ljubljana.

Anser anser (Greylag Goose)

Slovenia

Breeding long-term trend: Birdlife International (2004): Birds in Europe: population estimates, trends and conservation status. BirdLife Conservation Series No. 12. – Birdlife International, Cambridge. Geister I. (1995): Ornitološki atlas Slovenije. Razširjenost gnezdk. – DZS, Ljubljana. Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): Atlas ptic Slovenije. Popis gnezdk 2002–2017. – DOPPS, Ljubljana.
Winter population size: Božič L. (2013): Rezultati januarskega štetja vodnih ptic leta 2013 v Sloveniji. – Acrocephalus 34 (156/157): 93–103. Božič L. (2014): Rezultati januarskega štetja vodnih ptic leta 2014 v Sloveniji. – Acrocephalus 35 (160/161): 73–83. Božič L. (2015): Rezultati januarskega štetja vodnih ptic leta 2015 v Sloveniji. – Acrocephalus 36 (164/165): 57–67. Božič L. (2016): Rezultati januarskega štetja vodnih ptic leta 2016 v Sloveniji. – Acrocephalus 37 (170/171): 209–219. Božič L. (2017): Rezultati januarskega štetja vodnih ptic leta 2017 v Sloveniji. – Acrocephalus 38 (174/175): 203–215. Božič L. (2018): Rezultati januarskega štetja vodnih ptic leta 2018 v Sloveniji. – Acrocephalus 39 (178/179): xx–xx.
Winter short-term trend: Božič L. (2007): Rezultati januarskega štetja vodnih ptic leta 2007 v Sloveniji. – Acrocephalus 28 (132): 23–31. Božič L. (2008a): Rezultati januarskega štetja vodnih ptic leta 2008 v Sloveniji. – Acrocephalus 29 (136): 39–49. Božič L. (2008b): Rezultati januarskega štetja vodnih ptic leta 2009 v Sloveniji. – Acrocephalus 29 (138/139): 169–179. Božič L. (2010): Rezultati januarskega štetja vodnih ptic leta 2010 v Sloveniji. – Acrocephalus 31 (145/146): 131–141. Božič L. (2011): Rezultati januarskega štetja vodnih ptic leta 2011 v Sloveniji. – Acrocephalus 32 (148/149): 67–77. Božič L. (2012): Rezultati januarskega štetja vodnih ptic leta 2012 v Sloveniji. – Acrocephalus 33 (152/153): 109–119. Božič, L. (2008): Monitoring populacij izbranih vrst ptic – Zimsko štetje vodnih ptic 2002–2008. Končno poročilo. – DOPPS, Maribor. Rubinič, B. & Božič, L. (2009): Monitoring populacij izbranih vrst ptic. Rezultati zimskega štetja vodnih ptic 2009, rezultati popisov preleta ujed v jesenski sezoni 2008. 2. vmesno poročilo. – DOPPS, Ljubljana. Božič, L. (2010): Monitoring populacij izbranih ciljnih vrst ptic – Zimsko štetje vodnih ptic. Poročilo. – DOPPS, Ljubljana. Božič, L. (2011): Monitoring populacij izbranih ciljnih vrst ptic – Zimsko štetje vodnih ptic. Poročilo. – DOPPS, Ljubljana.
Winter long-term trend: Birdlife International (2004): Birds in Europe: population estimates, trends and conservation status. BirdLife Conservation Series No. 12. – Birdlife International, Cambridge. Sovinc, A. (1994): Zimski ornitološki atlas Slovenije. – Tehniška založba Slovenije, Ljubljana.

Spain

Winter population size: Información proporcionada por las Comunidades Autónomas. Rodríguez Alonso, M., & Palacios Alberti, J. (2018). Ánsar común – Anser anser. En: Enciclopedia Virtual de los Vertebrados Españoles. Sanz, J.J., Amat, J.A. (Eds.). Museo Nacional de Ciencias Naturales, Madrid. (http://www.vertebradosibericos.org/) SEO/BirdLife (2012). Atlas de las aves en invierno en España 2007-2010. Ministerio para la Transición Ecológica-SEO/BirdLife. Madrid. 816 pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/atlas_aves_invierno_tcm30-198034.pdf) SEO/BirdLife (2018). Censos de aves acuáticas. (http://www.acuaticas.org/WebForms/ConsultaContenidos/Paginas/RealMapasDistAbunEspecie.aspx)
Winter short-term trend: SEO/BirdLife (2018). Censos de aves acuáticas. (http://www.acuaticas.org/WebForms/ConsultaContenidos/Paginas/RealMapasDistAbunEspecie.aspx) SEO/BirdLife (2012). Programa de seguimiento de SEO/BirdLife 2011. SEO/BirdLife. Madrid. 35 pp. Información obtenida a partir de la Base de Datos del Inventario de especies terrestres. Censo de Aves Acuáticas Invernantes (Ministerio para la Transición Ecológica). (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/atlas_aves_invierno_tcm30-198034.pdf) SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. (https://doi.org/10.31170/0073)
Winter long-term trend: BirdLife International (2018). Anser anser. The IUCN Red List of Threatened Species 2018: e.T22679889A131907747. (http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22679889A131907747.en) González, R. & Pérez-Aranda, D. (2011). Las aves acuáticas en España, 1980-2009. SEO/BirdLife, Madrid, 338 pp. SEO/BirdLife (2018). Censos de aves acuáticas. (http://www.acuaticas.org/WebForms/ConsultaContenidos/Paginas/RealMapasDistAbunEspecie.aspx) SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. (https://doi.org/10.31170/0073)

Sweden

Breeding population size: Ottosson, U., Ottvall, R., Elmqvist, J., Green, M., Gustafsson, R., Haas, F., Holmqvist, N., Lindström, Å., Nilsson, L., Svensson, M., Svensson, S. & Tjernberg, M. 2012. Fåglarna i Sverige – antal och förekomst. SOF, Halmstad. Swedish Bird Survey. BirdLife Sverige, Annual Bird reports.
Breeding short-term trend: Svensk fågeltaxering - Swedish Bird Survey
Breeding long-term trend: Svensk fågeltaxering - Swedish Bird Survey
Winter population size: Nilsson, L. & Haas, F. 2016. Distribution and numbers of wintering waterbirds in Sweden in 2015 and changes during the last fifty years. Ornis Svecica 26: 3-60. Haas, F. & Nilsson, L. 2018. International counts of staging and wintering waterbirds and geese in Sweden. Annual report for 2017/2018. Lund University.
Winter short-term trend: Haas, F. & Nilsson, L. 2018. International counts of staging and wintering waterbirds and geese in Sweden. Annual report for 2017/2018. Lund University.
Winter long-term trend: Nilsson, L. & Haas, F. 2016. Distribution and numbers of wintering waterbirds in Sweden in 2015 and changes during the last fifty years. Ornis Svecica 26: 3-60. Haas, F. & Nilsson, L. 2018. International counts of staging and wintering waterbirds and geese in Sweden. Annual report for 2017/2018. Lund University.

Switzerland

Breeding population size: Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strebel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach.
Breeding short-term trend: Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strebel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach.
Breeding long-term trend: Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strebel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach.
Winter population size: Strebel, N. (2019): Überwinternde Wasservögel in der Schweiz: Ergebnisse der Wasservogelzählungen 2018/2019. Schweizerische Vogelwarte, Sempach./Strebel, N. (2019): Monitoring hivernal des oiseaux d'eau en Suisse: Résultats des recensements des oiseaux d'eau 2018/2019. Station ornithologique suisse, Sempach.
Winter short-term trend: Strebel, N. (2019): Überwinternde Wasservögel in der Schweiz: Ergebnisse der Wasservogelzählungen 2018/2019. Schweizerische Vogelwarte, Sempach./Strebel, N. (2019): Monitoring hivernal des oiseaux d'eau en Suisse: Résultats des recensements des oiseaux d'eau 2018/2019. Station ornithologique suisse, Sempach.
Winter long-term trend: Strebel, N. (2019): Überwinternde Wasservögel in der Schweiz: Ergebnisse der Wasservogelzählungen 2018/2019. Schweizerische Vogelwarte, Sempach./Strebel, N. (2019): Monitoring hivernal des oiseaux d'eau en Suisse: Résultats des recensements des oiseaux d'eau 2018/2019. Station ornithologique suisse, Sempach.

Turkey

Breeding population size: Ferdi Akarsu and personal communication (2019), www.kusbank.org , Ferdi Akarsu (Muş Kaz Lake, Sivas Tödürge Lake and Göydün Marhes population) Kirwann G.M., Boyla K. A., Castell P., Demirci B., Özen M., Welch H., Marlow T., 2008, Birds of Turkey. Londra, Christopher Helm, 978-1-4081-0475-3,32
Winter population size: Ebird Database and Midwinter Fowl Counts (2013-2018), Birdlife Estimate

Anser anser (Greylag Goose)

Turkey

Winter short-term trend: Midwinter bird counts 2012-2019
Winter long-term trend: Midwinter bird counts 1980-2019 and Historical Records come from OSME and other midwinter counts

Ukraine

United Kingdom

Breeding population size: Non-breeding population estimate from Frost, T.M., Austin, G.E., Hearn, R.D., McAvoy, S.G., Robinson, A., Stroud, D.A., Woodward, I.D. & Wotton, S.R. 2019. Population estimates of wintering waterbirds in Great Britain. <i>British Birds</i> 112: 130-145, divided by three, with the addition of 88 pairs in Northern Ireland, based on maximum published estimate there of 264 individuals. However this NI total is considered to be an under-estimate so overall the total is a minimum.
Breeding short-term trend: BTO/JNCC/RSPB Breeding Bird Survey data: Harris, S.J., Massimino, D., Gillings, S., Eaton, M.A., Noble, D.G., Balmer, D.E., Procter, D., PearceHiggins, J.W. & Woodcock, P. 2018. The Breeding Bird Survey 2017. BTO Research Report 706 British Trust for Ornithology, Thetford. https://www.bto.org/sites/default/files/bbs-report-2017.pdf
Breeding long-term trend: BTO Waterways Bird Survey/Waterways Breeding Bird Survey https://www.bto.org/about-birds/birdtrends/2018
Winter population size: The estimate is mean of 2012/13 to 2016/17 international censuses and includes adjustments to remove resident birds and those in Norway and Ireland (Mitchell & Brides 2017). Mitchell, C. & K. Brides. 2017. Status and distribution of Icelandic-breeding geese: results of the 2016 international census. Wildfowl & Wetlands Trust Report, Slimbridge. Frost, T.M., Austin, G.E., Hearn, R.D., McAvoy, S.G., Robinson, A., Stroud, D.A., Woodward, I.D. & Wotton, S.R. 2019. Population estimates of wintering waterbirds in Great Britain. <i>British Birds</i> 112: 130-145.
Winter short-term trend: Frost, T.M., Austin, G.E., Calbrade, N.A., Mellan, H.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. & Balmer, D.E. (2018). Waterbirds in the UK 2016/17: The Wetland Bird Survey. BTO, RSPB and JNCC, in association with WWT. British Trust for Ornithology, Thetford. 40 pp.
Winter long-term trend: Frost, T.M., Austin, G.E., Calbrade, N.A., Mellan, H.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. & Balmer, D.E. (2018). Waterbirds in the UK 2016/17: The Wetland Bird Survey. BTO, RSPB and JNCC, in association with WWT. British Trust for Ornithology, Thetford. 40 pp.

Bibliography

- Bird, J. P., Martin, R., Akçakaya, H. R., Gilroy, J., Burfield, I. J., Garnett, S. G., Symes, A., Taylor, J., Sekercioglu, Ç. H. and Butchart, S. H. M. 2020. Generation lengths of the world's birds and their implications for extinction risk. *Conservation Biology* 34(5): 1252-1261. DOI: 10.1111/cobi.13486.
- Brazil, M. 2009. *Birds of East Asia: eastern China, Taiwan, Korea, Japan, eastern Russia*. Christopher Helm, London.
- Carboneras, C. and Kirwan, G.M. 2014. Greylag Goose (*Anser anser*). In: J. del Hoyo, A. Elliott, J. Sargatal, D.A. Christie and E. de Juana (eds), *Handbook of the Birds of the World Alive*, Lynx Edicions, Barcelona.
- Delany, S. and Scott, D. 2006. *Waterbird population estimates*. Wetlands International, Wageningen, The Netherlands.
- Flint, V.E., Boehme, R.L., Kostin, Y.V. and Kuznetsov, A.A. 1984. *A field guide to birds of the USSR*. Princeton University Press, Princeton, New Jersey.
- Grishanov, D. 2006. Conservation problems of migratory waterfowl and shorebirds and their habitats in the Kaliningrad region of Russia. In: G. Boere, C. Galbraith and D Stroud (eds), *Waterbirds around the world*, pp. 356. The Stationary Office, Edinburgh, U.K.
- Johnsgard, P.A. 1978. *Ducks, geese and swans of the World*. University of Nebraska Press, Lincoln and London.
- Kear, J. 2005. *Ducks, geese and swans volume 1: general chapters; species accounts (Anhima to Salvadorina)*. Oxford University Press, Oxford, U.K.
- Kristiansen, J. N. 1998. Nest site preference by Greylag Geese *Anser anser* in reedbeds of different harvest age. *Bird Study* 45: 337-343.
- Madge, S. and Burn, H. 1988. *Wildfowl*. Christopher Helm, London.
- Mateo, R., Belliure, J., Dolz, J.C., Aguilar-Serrano, J.M. and Guitart, R. 1998. High prevalences of lead poisoning in wintering waterfowl in Spain. *Archives of Environmental Contamination and Toxicology* 35: 342-347.
- Melville, D.S. and Shortridge, K.F. 2006. Migratory waterbirds and avian influenza in the East Asian-Australasian Flyway with particular reference to the 2003-2004 H5N1 outbreak. In: G. Boere, C. Galbraith & D. Stroud (eds), *Waterbirds around the World*, pp. 432-438. The Stationery Office, Edinburgh, U.K.
- Scott, D.A. and Rose, P.M. 1996. *Atlas of Anatidae populations in Africa and western Eurasia*. Wetlands International, Wageningen, Netherlands.
- Snow, D.W. and Perrins, C.M. 1998. *The Birds of the Western Palearctic, Volume 1: Non-Passerines*. Oxford University Press, Oxford.
- Vickery, J. A.; Gill, J. A. 1999. Managing grassland for wild geese in Britain: a review. *Biological Conservation* 89: 93-106.
- Vähätalo, A.V., Rainio, K., Lehtikainen, A. and Lehtikainen, E. 2004. Spring arrival of birds depends on the North Atlantic Oscillation. *Journal of Avian Biology* 35: 210-216.
- del Hoyo, J., Elliot, A. & Sargatal, J. (ed.). 1992. *Handbook of the Birds of the World, Vol. 1: Ostrich to Ducks*. Lynx Edicions, Barcelona, Spain.